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THE ESTABLISHMENTS  
FOR  
THE BLIND  
IN ENGLAND

A Report  
TO  
THE MINISTER OF THE INTERIOR AND OF FOREIGN AFFAIRS

BY  
THE ABBÉ C. CARTON  
DIRECTOR OF THE DEAF, DUMB, AND BLIND INSTITUTE OF BRUGES

"Even he, whose hapless eyes no ray  
Admit from beauty's cheering day;  
Yet, though he cannot see the light,  
He feels it warm, and knows it bright."

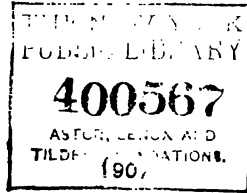
TURLAGH CAROLAN, *Irish blind poet.*

BRUGES  
IMPRIMERIE DE VANDECASTEELE-WERBROUCK  
RUE DES DOMINICAINS  
1838

LONDON  
SAMPSON LOW, MARSTON, AND COMPANY  
LIMITED  
St. Dunstan's House  
FETTER LANE, FLEET STREET, E.C.  
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# THE ESTABLISHMENTS FOR THE BLIND IN ENGLAND.

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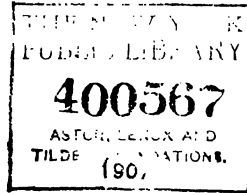
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do not ask society for enjoyment ; they ask only for work and independence. Thus it was that the name of Blind Workers (*Aveugles travailleurs*) first gained from the public in France expressions of such lively interest ; and it was the hope that the produce of their labours would suffice to cover the advances made which induced philanthropic society to pay the considerable expenses incurred in their favour from 1784 to 1790. Unluckily, experience soon sadly undeceived those who had founded too much hope on experiments, doubtless praiseworthy, but ill-calculated to attain their object. Little by little the means of the establishment became so reduced, that as early as 1791 it could no longer subsist on its own resources. The pupils lacked the most necessary requirements of existence. The interest they had inspired consequently became weakened. People had flocked enthusiastically to the public exhibitions of the blind people. They had applauded when they saw them—braving, as it were, the decrees of nature—reading, writing, cyphering, and speaking of arts and sciences. But they were looking, after all, for something more real, namely, that society would be relieved of a burden ; and only that which is real is lasting even in France. The sole objection made to M. Haüy's institution—and he himself tells us so (chap. ii., “ Essay on the Blind ”)—relates to this point : “ Had you the idea,” he was asked, “ when teaching your pupils all branches of education, of peopling the republic of letters with savants and professors, or of showing them how to find the means of subsistence ? ” “ People have done us the justice,” replies M. Haüy, “ to admit that we have accomplished the first object of our institution by offering an amusement to well-to-do blind pupils ; but, however, we do not claim that the most skilful of our pupils can ever be put in competition, in any way, with the most ordinary artist who can see. But we recommend them to public benevolence ” (*ibid.*). After this disheartening response the establishment fell into total oblivion, and would long since have ceased to exist if the Government had not granted it annual subsidies, which sufficed for the entire maintenance, and without work, of three times as many blind as the Paris Institute contains.

Mr. Howe, director of the Boston Institution for the Blind,\* visited the Paris establishment about 1830, and found it still in about the same state. "One in twenty," says he, "could scarcely get a living after eight years' apprenticeship, and even then not by practising one of the handicrafts learnt in the institution. He could only do so when chance or interest obtained for him a place as organist, or when he succeeded in obtaining some special post such as pianoforte tuner, which could only be in a large town."

M. Dufau, professor at the Paris Institute for the Blind, proposes in his essay a new organisation of these establishments, but, unfortunately, it suffers too much from the views with which this sort of establishment has hitherto been regarded in France.

There would be a higher institution at Paris, and secondary institutions in the departments. The limit of age of admission would be fourteen years, and the duration of residence in the institution four years. This time would suffice to go through the whole curriculum of primary instruction. Music would be taught there, especially with the object of finding out pupils who showed a real vocation for that art, and the complete instruction of whom would be one of the principal aims of the higher institution. Manual labour would also form part of the occupations of the children in the secondary institutions; but rather in order to initiate them into a number of processes which should make them more handy than to give them a real apprenticeship. Those pupils who, in the course of four years, had passed through the entire curriculum of instruction, and manifested a great natural taste either for science, letters or music, after having passed an examination proving their capacity, would be sent to the higher

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\* Dr. Howe, of the Perkins Institution and Massachusetts Asylum for the Blind at Boston, Mass., of whom and of the Institution itself an interesting account was given by Charles Dickens in "American Notes." Dr. Howe was the great benefactor and friend of Laura Bridgman, the poor blind deaf and dumb girl, and of him Dickens says: "There are not many persons, I hope and believe, who, after reading these passages, can ever hear that name with indifference."

institution at Paris, where manual labour would be excluded. The others would be sent back to their relatives or friends with a little knowledge, which is all very well, but without any means of subsistence, and more unhappy than before, because they would have tasted the pleasures of a studious life during those four years of youth which usually decide the habits of a whole life, and then would become a burden to their relatives, or perhaps would be obliged to beg for a living. These four years passed in the secondary institutions, instead of having contributed to their happiness, would thus only have served to increase their requirements, and to render the impossibility of satisfying them all the more painful. They will feel convinced they have the power of doing something really useful ; that they differ less from those surrounding them than they had imagined ; and that with some care and a little attention they could equal them in some respects, and always at least come near them. There they would have been the object of public attention, and felt that they possessed a place in society, however humble it might be, and that the barrier separating them from it might be passed. There they would have drunk (in Mr. Howe's words) at the fountain of knowledge so much as to have a thirst they would be unable to quench : they would have lived there long enough to make poverty and penury doubly painful ; and their minds would have been sufficiently cultivated to make even their instruction a source of misery. To send them away after those four years passed in a school would only be forming them for a hospital or a workhouse. The result is not worth the trouble.

The object aimed at then—above all in France—is to give these unfortunate beings an intellectual education, instead of trying to make them capable of getting their living by manual labour, so that they may become independent. It is science rather than a handicraft—it is the agreeable rather than the useful that is kept in view. The state of blindness, a celebrated French teacher said to me one day, takes away the physical rather than the moral powers. Therefore their beneficent teachers ought, above all, to try to develop the hearts and minds of the blind.

In England a different principle has guided those who have established institutions for the blind : this was to instruct them in manual labour—to make artisans of them, but not by any means to make savants of them. The principle of the economy of public charity was admitted, which teaches us that, since the poor blind are dependent upon society, it is better to procure them the means of gaining their living themselves than to provide for their wants by granting them a life annuity, and to attain this object schools were formed. The results are most satisfactory : a great number of the blind have succeeded in making themselves a position and in keeping their families by their industry.

At first this principle was applied too rigorously—every intellectual instruction being excluded—and in one of the first establishments in England the utility of teaching to read by means of letters in relief seems still to be doubted. Scotland modified these two too-exclusive principles, and combined them in such wise as to give the blind sufficient instruction to occupy them and raise their spirits, but taking care, nevertheless, not to employ in that way the time needed to make them skilful at a handicraft. This, as we see, was to bring them once more near to the position of those who have their sight, and worked, therefore, most efficaciously for their happiness. Public examinations have demonstrated the possibility of such a combination ; besides which their replies to questions have testified to the aptitude of the blind for the various branches of primary instruction and to the success of the philanthropic undertaking ; while, on the other hand, the annual reports on the financial position of the homes have proved that this instruction does not in any way injure the material prosperity of the home ; but, on the contrary, that the instruction which they have received had assisted in inspiring them with the taste for work by the noble wish to be useful, or, at least, not to remain a burden on their fellow-citizens.

The instruction varies again in each of these homes and institutions as much in Scotland as in England, and the degree to which it is carried differs materially between one school and

another, but nowhere is it given at the loss of time required for work. An hour, or an hour and a half, are given to it, and matters are so arranged as to make it a real recreation. We might have expected from the practical intellect of the English what they have done; and Scotland—while modifying, by its enlightened zeal for the propagation of primary instruction amongst this unfortunate class, whatever was too material in the English ideas—may boast of having solved the problem of this instruction by mixing the useful with the agreeable, as M. Haüy says.

One very important question, however, remains for discussion. People are quite agreed in England as to the nature of the education to be given to the blind, and everywhere it is first of all industrial, but they vary materially as to the employment of the blind after their instruction.

There are institutions which I shall call *schools* (*écoles*). In them children receive during a certain fixed number of years all the care their condition demands, and they pass the apprenticeship to a trade suited to their strength and to the degree of ability they have shown; but from whence they are sent away most of them with a gratuity of 50 to 100 francs (say, £2 to £4 sterling), destined to furnish them with the means to carry on the trade they have been taught, or perhaps with an assortment of all the tools necessary in the handicraft they have learnt.

The other institutions are rather homes (*asyles*). Their object is not solely to train their pupils to some handicraft during a certain period, and then to replace them by others, but to employ them after being educated in the home itself, should they desire it, or deserve it by their good conduct.

I have seen both systems, and I am now about to show their respective advantages.

The *schools* are founded with the idea that the blind are capable of doing when isolated what they can produce when working together, or at least that the difference is not considerable, and that the sending away those who have learnt a trade renders possible the admission of other blind pupils, and consequently

extends the beneficial influence of the institution. This is the system which was first followed, and it is still in vigour in some establishments in England and in Ireland, but is now beginning to be generally abandoned, since the results obtained by those institutions in Scotland, where they are all homes (*asyles*). As a matter of fact, the system of *homes* (*système asytaire*) must be restricted to a more limited number of pupils than can be admitted into a school, and its beneficent work does not seem capable of being so extended as that of a school, and must necessarily shut out a crowd of unfortunates who would have received an education if all the establishments of the kind were schools ; but this is only apparent, or rather only temporary, and really ends by procuring the education of a greater number. Let us notice, first of all, that the mass of blind workers in a home change oftener than we suppose ; in one way or another, either by death or otherwise, from one-tenth to one-seventh leave the home every year,\* which number is consequently renewed every ten, or at latest every fourteen years ; the succession of pupils in the schools is then at most only double relatively to that at the homes.

Notice further that this rapid succession of pupils subjects the institution to considerable losses, for they have scarcely acquired sufficient skill to give hope of their being useful by their labour than they leave the workshop, to give place to those who by their ignorance and awkwardness will in their turn occasion losses to the

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\* Subjoined are the admissions and departures of pupils in the home at Glasgow, where the changes are still more frequent.

From March 28, 1828, until	Pupils admitted.	Have left the Home or been sent away.	Number of Pupils deceased.	Total.
1829	38	7	3	10
1830	47	9	4	13
1831	57	10	5	15
1832	62	15	5	20
1833	70	19	5	24
1834	78	24	6	30
1835	86	24	7	31
1836	97	27	10	37
1837	105	29	12	41

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house. The inequality of production which is unavoidable in a school necessarily prevents being able to do business with regularity. Then the markets fail, and this entails other losses ; while a home, producing regularly every year almost the same quantity, and being in a position to supply precisely the same customers, because its staff is always nearly the same, is more certain of finding where to dispose of its produce. The sales of the blind schools of Paris, London, Liverpool, and Bristol compared with those of the Edinburgh and Glasgow homes will put this point beyond a doubt.

## SCHOOLS.

Place.	Year.	Number of Pupils.	Produce of Sales.	Produce of Sales.
			Francs.	Pounds Sterling.
Paris . . . .	1816	82	355	..
" . . . .	1817	89	848.95	..
" . . . .	1818	92	993	..
" . . . .	1819	93	905	..
London . . . .	1832	112	..	1,345
" . . . .	1836	112	..	1,469
Liverpool . . .	1835	105	..	1,839
" . . . .	1836	108	..	1,818
Bristol . . . .	1833	33	..	906
" . . . .	1834	33	..	992
" . . . .	1835	40	..	1,019
" . . . .	1836	43	..	1,138

## HOMES.

Place.	Year.	Number of Pupils.	Produce of Sales.
	Average from 1822 to 1832		Pounds Sterling.
Edinburgh . . . .	1828	80	3,200
Glasgow . . . .	1829	22	231
" . . . .	1830	28	642
" . . . .	1831	34	665
" . . . .	1832	42	887
" . . . .	1833	42	1,101
" . . . .	1834	45	1,189
" . . . .	1835	48	1,303
" . . . .	1836	55	1,953
" . . . .	1837	60	2,514
" . . . .		64	2,472

The sales of the homes with the like number of pupils thus exceed by more than one-half the sales of the schools ; and the profits differ in consequence. Yet more ; the expenses of the school at London amount yearly to four thousand pounds sterling and those of Liverpool to three thousand pounds, while they are only about one thousand pounds in the Edinburgh and Glasgow homes with an almost equal number of pupils.

Recapitulating the calculations I have made, we find that the profits of the sales are at least double in the homes, and that the expenses are three times less than in those establishments which are simply schools ; so that if the succession of pupils be more rapid in the schools, and if the instruction may consequently be extended to a larger number of persons, this advantage is only apparent ; for it is really easier to form two homes than to establish one school. But I must say, and I say it with profound conviction, that we can in no wise impute it to the directors of these establishments that the profits are less and the expenses heavier. The disadvantages are the forced consequences of the system itself. But it is not less surely proved that, in regard to the interior economy of the house, a home is preferable to an institution which is simply a school.

But let us go on—let us follow the pupils out of the establishment after receiving their education and working isolated.

A blind person imbibes courage when in the company of other blind people ; but, as he is naturally prone to low spirits, he soon loses his courage if isolated, and this all the more quickly because at every moment he is forced to admit the superiority of those who can see, and because he no longer inspires in others that interest which is caused by a number of the blind assembled together. It has often happened that blind persons, hoping to succeed in providing for themselves, have voluntarily quitted the homes in Scotland, and have settled in towns which seemed to offer the means for disposing of the produce of their labour. A noble ambition inspired them ; others have tried the same thing after having been expelled for misconduct. All had been several years in the establishment, and were mostly good workmen.

After a few years', often only a few months', trial they themselves have realised the impossibility of continuing alone the struggle with workmen who could see, and have asked to be re-admitted. These facts are not rare. In the Annual Report for 1833 of the Institute for the Blind at Dublin the same remark is made. "We have seen with sorrow," the trustees say, "that pupils who had acquired great skill in one or more trades, and had left the establishment with a good character and had received in wages a pretty considerable sum, have not succeeded in their undertaking on returning to their native place, owing to want of support and encouragement which they so much deserved; and that their funds having gradually become exhausted, they have been forced to return to Dublin and increase the already excessive mass of poverty."

At a meeting held in Manchester, during March 1834, relative to the erection of an institution for the blind, which is just about to be opened, the committee appointed to make the necessary inquiries assures us that also at Liverpool the need has long been felt of a home for the blind, who cannot provide for their needs with the wages they earn outside the establishment; and that the result of all the information they have obtained is that the Manchester institution ought to be a home (*asyle*).

I am convinced by the unanimous testimony of all the superintendents of establishments for the blind in England that advantages worthy of the undertaking are only possible in a home (*asyle*); therefore all efforts should tend to attain this object.

But, even supposing that the blind person in his isolation can produce as much as in a home, it is not everything to be able to produce; it is necessary to be able to sell.

A public institution which is always before the public has a power of attraction which the isolated blind man does not possess. People are proud of having a blind asylum, they look upon it as a national glory, and so they like to contribute to its reputation, and all the more because the influential men who are at its head can attract their acquaintance by assuring them that the primary materials used are always of the best quality, and that the prices

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are no higher than elsewhere. This again would only be possible in an asylum, which by means of its capital can procure for cash and at the lowest prices the best primary material, which ordinary workmen cannot do ; and that which the workmen who have their sight gain by their greater skill they lose by the high price they must pay for their material. Thus competition becomes possible when the blind work in a body, and never when they are isolated.

In an institution where the blind pupils do not stay after receiving their education only those trades can be taught which do not demand a large capital, nor a number of workers, nor expensive machinery. Each trade must be an individual labour, whereas in an asylum the use of steam-engines and the division of labour for the making of a single production might be introduced with immense advantage.

It has been proved that more than one-quarter, if not one-third, of the blind have become so at an advanced age. Military ophthalmia alone caused 960 out of 4,117 cases of blindness in Belgium in 1835. For this numerous class, too old for acquiring the skill needed for a handicraft, a trade easily learnt and productive from the beginning is wanted. In an asylum you can make use of the strength of such unfortunate beings and employ them profitably, whereas in a school they would never be able to gain their bread. Thus the principal occupation in the Edinburgh asylum is the making of horsehair mattresses. The manipulation of the horsehair before it is twisted occupies those who have the least aptitude for a handicraft ; the use of a steam-engine renders this work easier and more productive ; others twist the horsehair. Many are employed in weaving the wool for the mattress. This occupation, if it were isolated, would scarcely bring in as much as a blind man could earn by doing anything else ; but, in this asylum, the consumption is certain and the highest price is given. The girls sew the coverings, and the most adroit blind people fill the mattresses. This division of labour brings in wages which no trade could procure, and usefully employs the duller blind inmate from the first day of entering the asylum.

Now let us speak of a rather numerous class of the blind hitherto but little thought of by those who have contributed to found schools, and which deserves all our attention. I wish to speak of men who have become blind after marriage. There are few cases more deserving of our sympathy. Having become blind at a time of life when all habits are formed, what can be done for them in a school? But in an asylum work can be found for them suited to their taste and ability, and the hours of labour can be alternated with the time they wish to pass every day with their family. Thus it is that at Edinburgh there are twenty married men in the asylum, who have families they support by the fruit of their labour; and at Glasgow the number is still more considerable.

Education in establishments for the blind ought then, before all, to be industrial, and all our care ought to tend to the making useful citizens of them, instead of wishing to fashion them into savants. Learned people are sufficiently numerous in the class which can see, so that we may dispense with seeking for them in the class to which this quality would be quite useless, if not a source of unhappiness. Besides, why wish to obtain more instruction for them when they are blind than would be given them if they possessed all their senses? I could understand it if science made them happy, or if it helped them to get a living; but that is not so. It has been proposed to make schoolmasters of them; but whatever has been said or written on the subject, there is not only an insurmountable prejudice which declines to admit the blind as teachers of ordinary children, but there are very good reasons which will always prevent them. In fact, it is not simply a question of instructing the young, of teaching to read and write, but of giving an education; and for this supervision at every moment is necessary, and of this they are incapable.

A profession, but not science, that is the object of their education. Amongst the means of more surely attaining this end, and of exercising the most influence on the happiness of the blind, an asylum is in all respects superior to a school, and is alone capable of procuring lasting good.

## CHAPTER II.

ORIGIN AND ORGANISATION OF ESTABLISHMENTS FOR THE  
BLIND IN ENGLAND.

STATISTICS of the blind have not yet been officially made in England. However, some private statements put us in a position to know their approximate number. The directors of the blind school at York have communicated the results of their researches on that county. A form was sent containing necessary questions on the age, the causes of blindness, &c. Nearly 700 replies were received; the population of the parishes in the county of York which sent them was, in 1831, 862,533; corrected for 1836, 940,926.

The forms received give the number of the blind	840
Below 50 years of age . . . .	326
Below 25 years of age . . . .	143
From 10 to 20 years of age . . . .	58
From 10 to 16 years of age . . . .	40
Below 10 years of age . . . .	49

In applying this result to all the population of the county, we find the numbers following :—

Population of the county of York in 1831, 1,374,296; corrected (in round numbers) for 1836, 1,500,000.

Blind people in the county . . . .	1,339
Below 50 years of age . . . .	520
Below 25 years of age . . . .	223
From 10 to 20 years of age . . . .	92
From 10 to 16 years of age . . . .	64
Below 10 years of age . . . .	78

It is to be supposed that this number is below the real number ; but while admitting this, and extending it to all England, we find that there are, in a population of 15,000,000, 13,390 blind persons ; but if we include Scotland and Ireland, that is, a population of 25,000,000, we find 22,316 blind persons ; and the number of those capable of receiving instruction, only counting those aged from 10 to 25 years, is 2,296.

But the number of the blind appears to be still more considerable in England, and may be estimated at 1 in 1,000, or 25,000. Mr. Anderson estimates it at 1 in 890, or 28,000.

Supposing that a quarter of this number are incapable of receiving instruction because of their age or of illness, and that one-fourth are below 10 years of age, there still remain 14,000.

We deduct from this number 3,000 blind belonging to the upper or middle classes, and who do not need the aid of asylums. There remain 11,000 blind capable of instruction, and who have a right to claim from society the means of existence. The establishments throughout the United Kingdom contained in 1836-37 the number of pupils as follows :—

London	.	.	.	.	.	.	122
Liverpool	.	.	.	.	.	.	108
Edinburgh	.	.	.	.	.	.	82
Glasgow	.	.	.	.	.	.	60
Bristol	.	.	.	.	.	.	43
Norwich	.	.	.	.	(about)	.	40
Dublin	.	.	.	.	.	.	39
York	.	.	.	.	.	.	19
Belfast	.	.	.	.	(about)	.	10
Molyneux (Dublin)	.	.	.	.	.	.	30
Total							<hr/> 553

Thus there are more than 10,000 blind who, in England, do not receive any instruction, and most of whom are a burden on

society. For experience has demonstrated that, with few exceptions, a blind person left to himself is scarcely in a position to gain a living. In England, however, institutions for the blind are more numerous and better organised than in most other countries. There, too, those institutions have been established earlier than anywhere else, excepting France, which has the honour of having erected the first establishment of the kind ; but that at Liverpool is almost contemporary with it.

It was in 1791 that a humble citizen—Pudsey Dawson, Esq., who died in 1816—founded, with the aid of subscribers, a school for the instruction of the blind poor in manual labour, church music and organ playing. The establishment has hitherto been liberally supported by subscriptions, donations, and legacies ; and, as time went on, has gained such importance, owing to the number of its pupils, that it is sincerely to be regretted its directors have not raised it to the high standard of progress attained by the other institutions for the blind everywhere in England. It seems that some persons attached to the school know that a system of printing in relief has been invented for the use of the blind, and that they may be taught to read and write ; but hitherto the intellectual instruction of the pupils has not been deemed of importance ; they only learn some trade.

The principal employments are :—

	£	s.	d.
Rope-making : the sale of ropes in 1836 amounted to . . . . .	754	11	10½
Basket-making gives work to a great number of hands : the home sold in 1836 baskets producing the sum of . . . . .	368	18	8
Ordinary rope-matting, mats made of old tarred rope : rough rope mats and carpets were made and sold in 1836 for the sum of . . . . .	502	11	10
There are also shoemakers there ; the girls knit slippers and some of them sew : the total sales of the year 1836 amounted to	1818	18	0½



The machines there are very good. Masters who can see are regularly employed to teach these various trades. Notwithstanding the large output, the establishment does not profit by its productions. As I have already stated, the pupils leave the home at the moment they begin to be able to make themselves useful, and the masters' wages absorb the rest.

The staff of the establishment consists of the following officials :—

	£	s.	d.
Superintendent and his wife . . . .	283	10	0
Supervisor of the wardrobe . . . .	21	0	0
Master weaver . . . . .	70	5	0
„ rope-maker . . . . .	58	5	0
„ basket-maker . . . . .	70	5	0
„ shoe-maker . . . . .	70	5	0
„ of music . . . . .	90	10	0
„ „ singing . . . . .	70	0	0
Domestic servants . . . . .	59	6	7
Collector of subscriptions . . . . .	20	5	10
Chaplain . . . . .	500	0	0
Total . . . . .	1313	12	5

The number of pupils received into this institution since its foundation until 1836 is 984, and there were 108 there on the 1st January, 1837. In 1836, 31 new pupils were admitted, and 28 quitted the establishment. Of these 11 were basket-makers, 4 shoe-makers, 2 rope-makers, 2 seamstresses, and 2 mat-makers. On leaving 3 received four guineas, and 4 three guineas. Of this number 9 worked well, 6 had only succeeded tolerably, 8 others had made no progress, and the rest very little. The blind there are classified as totally blind and partially blind, so much so, however, that what sight they have is of no practical use to them.

Statistics compiled at Liverpool.	Totally.	Partially.	Total.
Blind from birth . . . . .	50	28	78
„ „ small-pox . . . . .	170	42	212
„ „ inflammation of the eyes . . . . .	188	120	308
„ „ cataract . . . . .	57	78	115
„ „ exterior causes . . . . .	56	28	84
„ „ a defect in the optic nerve . . . . .	63	46	109
„ „ an imperfect organisation . . . . .	3	9	12
Have lost their sight at sea . . . . .	8	1	9
„ „ gradually . . . . .	4	0	4
„ „ in consequence of } fevers . . . . .	9	2	11
„ „ from measles . . . . .	5	3	8
„ „ „ „ hooping-cough . . . . .	1	0	1
„ „ „ „ convulsions . . . . .	2	3	5
As the result of unknown or imperfectly } described causes. . . . .	15	13	28
* Totals . . . . .	611	373	984

The income of this home is rather large :—

	£	s.	d
Parishes or friends of pupils paid for their maintenance in 1836 . . . . .	516	13	4
Various debtors have paid . . . . .	37	13	8
Productions of the home sold for . . . . .	1767	18	11
Various legacies have realised . . . . .	1032	10	0
Donations and subscriptions . . . . .	1184	6	0
Interest of sums invested . . . . .	81	11	2

\* Below are corresponding statistics for Glasgow until 1837:—

STATISTICS COMPILED AT GLASGOW UP TO 1837.

Blind from birth . . . . .	12
„ „ inflammation of the eyes . . . . .	27
„ „ small-pox . . . . .	17
„ „ amaurosis . . . . .	6
„ „ cataract . . . . .	5
„ „ accident . . . . .	11
From scarlatina, typhoid and nervous fever . . . . .	3
„ the obscuration of the transparent cornea, from measles . . . . .	2
„ unknown causes. . . . .	14
Total. . . . .	97

	£	s.	d.
Received for clothes supplied to pupils. . .	249	0	6
Received for the sale of hymn books . . .	9	16	0
Found in (alms) boxes . . . . .	55	12	3
In the Treasurer's hands since last Report	65	1	1
ditto this year . . .	613	18	5
Profits of the Chapel, with last year's bonus	2334	0	4

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Total Revenues of the Home. £7948 1 8

or nearly 200,000 francs ; and the expenses for this same year amounted to £5232 3s. 10d.—that is, at the most 130,000 francs.

The buildings are situated in one of the most beautiful parts of the town, and have been constructed for the purpose they were intended to serve. They are roomy and well ventilated.

The second establishment constructed for the blind was the one at Edinburgh. The celebrated Dr. Blacklock, who long resided in that city, had often wished to erect an institution for the education of persons who, like himself, had been deprived of sight.

He imparted this idea to his friend Mr. David Miller, a teacher in Edinburgh, and who had been blind from his birth. Mr. Miller was a striking example of the influence which a judicious education may exercise if early begun. After Dr. Blacklock's death Mr. Miller consulted with the Rev. Dr. David Johnston, of North Leith, whose actively benevolent character he had the opportunity of appreciating. The worthy Dr. Johnston speedily resolved to realise his friend's philanthropic idea. The project was then brought before the public with a view to enlist its interest in the undertaking. Mr. Miller also wrote to M. Haüy for information, and received a very polite letter from him, together with a copy of his "Essay on the Education of the Blind."

Immediately afterwards a meeting of some friends was held under the auspices of Sir William Forbes, Bart., and it was resolved to erect an asylum so soon as funds would permit, and on the 20th December, 1792, they amounted to nearly £700. They met again, and Mr. Johnston was appointed secretary. The

home was opened on the 23rd September, 1793, and nine blind persons were admitted.

Mr. Miller continued to attend to the blind, and rendered great assistance to the budding institution. He applied himself specially to teaching the girls various manual occupations ; but he did not live to see the separate establishment for girls, which the present secretary, Mr. Robert Johnston, has founded.

Dr. Henry Moyes, a blind man and a professor, gave at that time lessons in philosophy and natural history, and announced a public meeting in behalf of the blind, which attracted a crowd of the most prominent inhabitants of the city. This considerably increased the funds already at the disposal of the governing body, and permitted the purchase of premises in 1806. Another building in the same street was bought in 1822.

The chief object of the founders of the institution was to teach the blind a trade, so that they might, if possible, maintain themselves by their own industry.

At first the house was an asylum, and those who gave fifteen pounds sterling on entering had a right to all the advantages and privileges of the establishment for life ; but insufficient funds not permitting the continued admittance of new pupils, the original scheme had to be modified. Under what is termed the new system, there was added to the asylum a school for young blind persons, who only remained for a fixed term of years, whose board is defrayed by their parishes or friends. After three years' apprenticeship these pupils receive all that they earn, which, while diminishing the burden on their benefactors, is a great encouragement to these unfortunates themselves, and creates in them the wish to make themselves completely independent by their labour.

Dr. Johnston, who chiefly directed the asylum until his death, and the other members of the council, carefully supervised the industrial education of the pupils. They in no wise neglected their moral and intellectual instruction. Ever since the home was opened religious instruction had constantly occupied the directors' attention, and was the object of all their solicitude.

During the year 1820 the scheme of education began to be extended to other branches of useful knowledge. It is especially to the exertions of Mr. Robert Johnston, the present secretary, that the institution owes the brilliant position it now occupies. Since the death of his uncle, Dr. Johnston, he has never ceased to watch over the interests of the blind pupils with an indefatigable zeal, contriving whatever could enlighten their intellect and increase their happiness. Therefore he looks upon them as his children rather than as persons dependent on public charity.

A house had been founded separately at Sciennes (?) for lodging and boarding young blind persons; but pecuniary considerations forced the governing body to abandon it in 1832. However at the time of my visit to this establishment the project had been once more adopted, and preparations for the admission of 16 pupils were already far advanced. It should be remarked, in order to understand the preceding statements, that the blind are not lodged in the asylum. Most of them reside in the vicinity of the establishment; a great number are married and have families, and the benefits of the asylum are thus extended to more than 250 persons, women and children.

In the month of October the blind are accustomed to purchase their supplies of potatoes and coals for the whole winter. It is the blind themselves who bargain for these purchases, and do so with all the prudence of those who can see. When the bargain is concluded, it is referred to the secretary, who guarantees payment. This arrangement insures their getting the best articles at the lowest prices. Then every one applies for what his household needs out of the total quantity thus purchased. From the month of October the blind pay weekly to a treasurer, whom they have chosen from amongst themselves, the small sum of sixpence or a shilling, according to what they have received. These small sums are deposited in a savings bank until they amount to ten pounds sterling, when the treasurer pays them into the hands of the secretary, who gives him a receipt. This is, as we see, to imbue them with habits of forethought, and to form their minds by caring for their bodies. Nothing should be neglected in the

education of the blind which may assist in giving them ideas of order. For instance, the day for paying wages has been changed, and wages have for some years been paid only on Monday evening, and the change has prevented several abuses.

The hours of labour for the blind from the 15th March till the 15th October begin at 6 o'clock in the morning ; during the other months of the year they begin at 8 o'clock. A time of not more than half an hour is allowed for prayer every morning and evening. On Saturday afternoons and Monday mornings religious instruction is given. All the blind are obliged to be present at these exercises, and absence without sufficient cause, or improper behaviour during this time, if not amended, involves dismissal. They are allowed one hour for going to breakfast and one hour for going to dinner ; in winter they have to bring their breakfast instead of going to their abode for it.

Any one coming too late undergoes a punishment proportioned to the time and to the number of repetitions of the offence. If any one be idle or pass his time in talking, if he spoil or destroy his materials, his wages are reduced, and if he do not amend he is expelled.

Their moral conduct is carefully looked after, and faults are severely reprimanded or punished by expulsion. Those who are ill, if they obtain a doctor's certificate, continue to receive their ordinary wages the first week—that is, if their illness be not caused by their own fault ; but if their illness continue, they receive only half their usual wages unless the secretary decide otherwise. The blind employed at the asylum are not allowed to work at the same trade at home. On this point the management insists ; and it is necessary to prevent the theft of primary materials.

Without claiming the right of preventing those from marrying who have that intention, the directors insist on the blind consulting them before entering into that state, and they are always ready to give the best advice in a matter of such importance. The blind are enjoined to be at their homes after nine o'clock at night, and the least appearance of drunkenness is severely punished. The directors recompense those who at the year's end have the

largest amount in the savings-bank, and every one is obliged to have a small sum at least there. The selection of the dwellings for those pupils who are not married is made by the directors.

These rules are read to the blind four times yearly, so that no one can plead ignorance of them.

What I have said refers principally to the men's establishment. Some observations on the girls' establishment will be of interest. They are trained on the same liberal principles as the men. All the girls are lodged in the house, excepting two or three, whose parents reside in the city.

The moral and intellectual condition of the girls is nearly the same as that of the men. When conversing, they are gay and happy, and polite and obedient to each other. They pass the hours of recreation in converse, or in initiating one another into some of those acquirements which so powerfully contribute to elevate the mind and to develop the understanding. Several of the girls execute with taste the most complicated pieces of music.

The business of the asylum is directed by a committee chosen by the patrons and subscribers, and which consists of a chairman, four residents, a treasurer, a secretary, four auditors, two clerks, an accountant, and twelve ordinary directors. But the soul of the whole institution is the secretary, the worthy Mr. Johnston. It is to him I owe most of the notions I have acquired of the economy of an asylum, and I am happy to be able to express here all my gratitude to him.

Another institution was established in 1793 at Bristol, under the title "Bristol Asylum, or Industrial School for the Blind." Its object is not to employ the blind after being educated, but to teach them the means of getting a living by work. This establishment is also due to public charity, so powerful in England, and its beneficent influence has been extended since its foundation to more than two hundred unfortunate creatures. Blind persons from all the counties of England are received there.

In consequence of the receipt of two legacies in 1829 and 1830, it was resolved to build a new home. The land was bought for £1850 sterling, and a magnificent Gothic building was erected

there for the accommodation of 70 boarders, with work-rooms for 100 persons. This edifice cost no less than £10,000 sterling, or more than 400,000 francs.

The number of pupils has of necessity been limited for want of room ; but there is every hope that the number will be increased. The subjoined table shows the position of this home in different years.

Years.	No. of Pupils	Income.			Sales.			Expenses of Management and Maintenance.			Observations.
		£	s.	d.	£	s.	d.	£	s.	d.	
1797	..	513	6	7½	154	6	7	387	15	11	
1802	..	1266	19	9	438	19	6	611	19	7	
1808	..	2526	3	4	1044	2	10	1998	16	8	
1810	..	2472	0	4	1088	11	11	2145	3	10	
1811	..	2662	13	8	1039	7	3	1917	14	8	
1812	..	2408	14	4	948	14	7	2085	12	8	
1821	20	2168	17	2	904	6	5	1730	10	10	
1822	21	2383	12	1	765	4	9	1594	6	11	
1823	23	2091	9	8	762	9	10	1806	19	6	Disbursements for the new building during the years 1834 to 1836.
1824	22	2187	8	4	924	1	3	1763	14	0	
1826	25	2006	17	2	975	19	2	1782	15	4	
1827	28	1961	3	7	999	0	5	1899	8	3	
1833	33	11772	14	2	906	12	6	1977	6	10	Years.
1834	39	10525	3	3	992	11	2	1841	14	7	£
1835	40	10164	14	4	1019	7	3	2202	8	0	s.
1836	43	9041	7	4	1138	1	8	1971	13	10	d.
											1834..1999 3 6
											1835..5205 0 5
											1836..6662 1 2

The parishes or private individuals who place blind persons in the asylum pay three shillings per week for the boys, and two shillings a week for the girls, and supply their clothes ; but after five years' apprenticeship they are entitled to all they earn. The asylum places the boys out to board with respectable families in the neighbourhood, and pays nine shillings per week for their food. Pupils under nine and above thirty years of age are not received. The ordinary course of education is seven years, but a great number leave the institution before the completion of this term. The teaching of reading by means of relief type on the Glasgow system has been introduced. Music is taught there ; many pupils learn to play the organ, and all are practised



twice a week in sacred singing. Basket-making is the principal occupation of the pupils, and the productions of the establishment in this work surpass everything of the kind I have ever seen made by the blind.

The School for the Indigent Blind at London was founded in 1799 by Messrs. Ware, Bosanquet, Boddington, and Houlston. The object proposed was to teach the pupils a trade, so that they might gain a subsistence wholly or in part. In 1800 there were only fifteen pupils, and the Institution attracted very little public attention. But liberal subscriptions and legacies for more than a million and a half of francs (say £60,000) permitted an extension of the beneficent objects of the home. At present there are 122 blind in the Institution, sixty of whom are men and sixty-two women, and it is expected that the number may gradually be increased to one hundred of each sex. Pupils under twelve and over thirty years of age are not admitted, and those from twelve to eighteen years are preferred. During the time of their being educated, the pupils are lodged, fed, and clothed in the home. They are kept there until they have acquired sufficient skill at a handicraft, which is generally from four to five years, but necessarily depends on the capacity of the pupil. Then they leave the establishment with a portion of their wages, and a complete assortment of the instruments necessary for the trade they have learnt. Since its foundation, 252 blind have been admitted there, and several have left the home very thankful for the instruction they have received, and able to contribute a notable part towards their keep. Some of them who could gain a livelihood by their work have been retained in the home to assist in its business ; and, in consequence of a magnificent legacy of 250,000 francs (say £10,000), left by Mr. Tillard, some others who would not have been able to get a living are fed and lodged for an indefinite time, and are called the Tillard class ; so that this institution begins to partake by degrees of the nature of an asylum.

We owe to the institution at London an excellent idea, and one which will evidently diminish the inconveniences of the schools.

The pupils who have left this establishment are permitted to send there what they produce, and they are paid according to a tariff. Already in 1832 goods to the value of £237 had been received, and in 1836 to the value of £378 14s. 9d.; and it may be safely predicted that these purchases will continue to increase from year to year.

A splendid building is just now being erected for this school. At the time of my visit it was nearly finished. It is also one of the richest foundations in England. It has a revenue of no less than 300,000 fr. (say £12,000) per annum, and funded property to the amount of one million and a half francs (say £60,000). Various trades are taught there. I shall speak more in detail of them in the next chapter, but some appear to me better calculated to show what a blind person can succeed in doing by sheer patience and care than to give them the means of providing for their necessities by work. There are several blind shoemakers in the home.

The sales in general amounted during 1832 to £1345, and in 1836 to £1469 14s. 1d., and the ordinary expenses to £5,568 4s. 8d.

Some of the blind learn vocal music, and some of the girls sing very well. One amongst them entrances you with her singing so long as you do not look at her; but the impression is lost when you perceive that this lovely voice comes from so ugly a face. Music is taught as a profession to be utilised, and it is hoped to train organists there.

All the instruction is confined to reading, and the books used are those printed at Glasgow; the pupils, however, prefer those printed at Edinburgh. But so little importance is attached to the teaching of reading that there are scarcely two pupils who read satisfactorily.

The blind belonging to the higher classes of society have often been the first benefactors of their poorer companions in misfortune. In this way the school at Norwich was started. Mr. Tawell, himself a blind man, first called the attention of his fellow-citizens to this class, still abandoned to a state of idleness.

He therefore proposed to give a large house with a garden of three acres, provided means could be found to organise it. A meeting of citizens was held on the 17th January, 1805, and it was stated that a sum of £1000 would be required to cover the expenses of its first establishment, and a further sum of £700 yearly to maintain it, and this was obtained from public liberality. The house is a school for the young blind, and a hospital for the aged. The latter must have attained their fifty-fifth year before they can be received. The former are not admitted under twelve years of age. For some time they were admitted from the age of ten, but this has been altered to the age originally fixed. Ordinary poor persons pay nothing for their admission, and stay in the establishment; but if the blind are chargeable to their parishes, three shillings per week is charged. The young are retained until they have learned a trade; but never longer than three years. The establishment was originally intended only for the blind of the city of Norwich; but afterwards all those of the county of Norfolk were admitted; and, in 1819, it was opened to the blind of the whole kingdom in order to be able to accept the donation of five hundred guineas which Mr. Henshaw, of Oldham, offered on that condition. The directors publish reports every year in the city newspapers, but they very rarely print them separately, so that it is difficult to obtain correct ideas as to its condition and progress. According to a report published in 1833, the house has admitted since its opening 153 young and 48 old blind persons. Of this number 77 have left the school in order to work on their own account; 12 could not be taught; 4 left the house without permission; 13 have been expelled for irregularity in their conduct, and 16 have left voluntarily; 45 died, and 36 still remained in the establishment in 1833.

In 1837 there were 50 pupils in the Norwich Institution for the Blind; 35 young and 15 old. The aged blind are not obliged to work, for they are looked upon as being in a hospital; which, it seems to me, must very much contribute to make their life a hard one.

The expenses of the house from its beginning have nearly always balanced the income. They were in round numbers :—

In 1805	1806	1807	1808	1809	1810	1811
£ 1767	1843	869	1135	730	1483	1406

In 1812	1813	1814	1815	1816	1817	1818
£ 1259	1189	998	967	1217	1251	928

In 1818 articles made by the thirty-three pupils the house then contained were sold for £230 11s. 1d., and these were not sold dearer here than anywhere else. The principal occupation both of the boys and of the girls is basket-making. Besides this, the girls knit and do other trifling work. The wages are from two shillings and sixpence to five shillings per week. Compared with what is paid in other institutions, this salary would appear low ; but the report of 1819 states that labour is less remunerated at Norwich than in other towns of the kingdom, that materials are dearer there, and the price of productions lower. The pupils are taught psalmody ; they sing in parts, and many of the blind play musical instruments and practise every evening. Books printed at Glasgow were introduced in 1837 : a dozen pupils then applied themselves to reading. Intellectual education was little cared for ; but the present governing body seems actuated by good sense, and it is to be hoped that in a little while other improvements may be introduced. The Norwich home (*asyle*) is the only one in England I did not visit on the journey I made in 1837 to study this branch of teaching ; but the information with which the superintendent of the home has kindly favoured me has enabled me to publish this note on the institution, which is the only one formed on this plan in England.

The home (*asyle*) at Glasgow also owes its origin to the beneficence of a rich man who had become blind. The late Mr. John Leitch, a Glasgow merchant, left £5000 to found

an Institute for the Blind, which was to be annexed to the Royal Infirmary; but it was considered that the benevolent intention of the donor would be more fully realised by establishing it separately. Parliament granted the necessary authorisation, and the superb building, which at present serves as a school for the youthful blind and as an asylum for the aged, was erected on a beautiful site. At first this institution did not receive general approval, and was for some time even an object of satire and ridicule. Happily Mr. Alston, the treasurer and father of this asylum, had the courage to despise these attacks, and raised the home to such a degree of prosperity that the most envious were forced to applaud.

On the 1st January, 1838, the house contained sixty-four blind. Children are received from the age of ten to sixteen. After school hours they are shown how to make nets for covering fruit trees, to sew sacks, and such other easy work as seems to suit them, until their education is finished and they have acquired such efficiency as to begin an apprenticeship to some special craft. The period is three years. £6 6s. is paid yearly for boarding the young blind. Clothes must be supplied by their relatives. Whoever gives, either himself or conjointly with others, the sum of £50, will have the privilege of placing two children in the asylum on paying only £3 3s. for each, or can have one admitted without payment. Corporations and parishes can have the same privilege on paying the sum of £100.

Blind girls above eighteen years of age are admitted into the establishment as daily boarders. They come at ten o'clock and remain until after evening prayers. They dine in the asylum and receive their wages weekly. The rate of wages varies. Those who wind worsted receive one shilling and fivepence per week. Twopence-halfpenny per spindleful is given to those who wind the yarn for weaving sacks.

Every blind person capable of work and residing in Glasgow or the neighbourhood, either in his own abode or with his friends, can be admitted into the asylum.

Those who, on admittance, do not know any of the trades

followed in the home have the alternative of paying two to five shillings for their apprenticeship, or of working for three months without receiving any salary.

At first only three shillings and sixpence are allowed as recompense for the work done by the blind, and this wage is increased according to what they produce until their apprenticeship is finished. Then a fixed sum is allowed them every week, but a certain quantity of work must be produced, which is carefully marked. At the end of each month a return is made of what they have produced, and if they have worked more than is required of them, the overplus is paid to them ; and, as a recompense for their industry, an extra shilling per week above their ordinary and extraordinary salary is given them. But if they have not finished their task, nor produced the quantity of work required, or if it be badly done, they keep the salary received every week, but are refused the shilling given to the others as an encouragement.

We can easily imagine the result of this measure and the influence it must exercise. A very marked improvement in the quality and the quantity of the work produced has been immediately shown. This is what the adults are able to earn in the Glasgow Asylum.

				s.	d.
Basket makers, per week	.	.	.	11	0
Rope makers	„	.	.	8	0
Weavers	„	.	.	8	0
Mat makers	„	.	.	11	0
Mattress makers	„	.	.	9	0

In 1835 the extraordinary salary and the recompenses granted each week amounted to £68 15s. 2d.

A kind of savings-bank and mutual guarantee society has been founded by the exertions of the treasurer. Every man on receiving extraordinary wages and recompenses pays in one shilling and every woman sixpence. The sum produced by these monthly receipts, increased by ten pounds produced by the sale of a pamphlet published by Mr. Alston, is lodged in the bank, and

remains there in reserve until an accident happens which gives the right of being compensated or aided by the common fund. However, the treasurer alone has the right of drawing upon it.

Every week, too, the blind also deposit a small sum to pay the rent of their house.

The benefit of this happy system of economy in the Asylum is extended outside the house to a large number of persons who have their sight. In 1836 one hundred and twenty persons profited by it; and in this way the blind, while gaining for themselves an honourable position in society, have the additional happiness of being able to think that they are making others happy.

Contrary to the custom in all other institutions, this asylum does not solicit annual subscriptions, but it is supported by its income, by legacies and donations. All that is demanded of public favour is the purchase of the articles made there, and the prices of which are not higher than those charged by other dealers. In this way (the directors say in their report for 1838) "our fellow-citizens may favour this establishment without making the slightest sacrifice."

The institution at York was opened on the 6th October, 1835, and owes its origin to one of the noblest conceptions that has ever been realised to honour the memory of a fellow-citizen.

William Wilberforce had represented the county of York during six successive Parliaments, a period of twenty-eight years, and had devoted himself to his country until the day of his death. A meeting of the most prominent men of the county was held on the 3rd October, 1833, to devise the means of worthily honouring his memory, and the following resolutions were adopted:—That Mr. Wilberforce had merited the veneration of his constituents: that a monument be erected to hand down to posterity the remembrance of a character so worthy of imitation by those engaged in public life. But, while the meeting approved the erection of a column at Hull, his native town, it was of opinion that it was expedient to erect a monument in which all the

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districts of this great county might take an interest, and that the nature of this monument should depend on the amount of the subscriptions which might be received.

At a subsequent meeting it was ascertained that public opinion was in favour of a school for the instruction of the indigent blind and for the training of them to habits of industry ; and from the 10th February, 1834, the central committee announced that the subscriptions responded to the promises made, and the construction was decided on. The house has, from the beginning, taken first rank in this kind of institutions owing to the care and zeal of R. W. Taylor, who was appointed its superintendent. Mr. Taylor is a famous mathematician, a member of the Royal Society of London, and honorary member of the Society of Arts of Edinburgh, &c. Since 1820 he had already undertaken the education of a rich blind man, and had since printed in Paris type small books for his pupil's use. Subsequently, when the Edinburgh Society of Arts received most important communications in answer to the question, What is the best alphabet for the use of the blind ? Mr. Taylor, whose knowledge was already highly appreciated, was chosen to give his opinion, which he did in a most interesting report. This was approved of and published by the Society. In 1837 the British Association for the Advancement of Science again selected him for the same subject. I speak of it more at length in the fifth chapter. Mr. Taylor is not a savant only, but he is also one of the most ingenious men I ever met. This is proved by the machines which he has invented or perfected for the use of the blind. In May, 1838, the home under his direction contained twenty-nine blind, thirteen of whom were girls. Pupils are admitted from the age of ten to sixteen years. At a meeting of the directors of the home, held in March 1838, it was decided to admit children from the age of nine years. Here, as in almost all other institutions of this kind, education and lodging are gratuitous ; but remuneration is demanded for board and clothes, &c. At first the board was four shillings per week, which was afterwards altered to three shillings and sixpence. Music is taught to those having a taste for it and on



paying an increased rate for board, unless the pupil be poor and have a very decided liking for the art. All the pupils learn arithmetic, reading, geography, &c. The trades are those which have been introduced elsewhere. One of the pupils at the end of an apprenticeship of eighteen months was in a position to earn eleven shillings per week as a basket-maker. The sales from the commencement of the institution until March 1837, amounted to £48 10s. 1*d*. The income, including donations and subscriptions, amounted to £9002 2*s*., and the expenditure to £3209 16*s*. 6*d*. I publish at the end of this account the general regulations of this institution.

Another institution was opened in May 1838, at Manchester. Mr. Thomas Henshaw left a legacy of £20,000 in 1810 exclusively for the maintenance of an asylum for the blind, and on condition the land should be bought and the house built by others. The inhabitants of Manchester subscribed nearly £10,000, and in 1837 I saw the building, which was almost finished. It is situated next to the Deaf and Dumb Institution. The chapel separates the two establishments and connects them so as to make one grand and splendid structure in the Gothic style, of which the English are at present so fond.

In 1837 Mr. David H. Wilson published in a Newcastle paper an interesting letter, wherein he showed the possibility and the necessity of founding an asylum for the unfortunate blind. His voice has found an echo, and an establishment has been opened there this year.

A large sum has been left for the erection of a charitable institution for the blind at Aberdeen, and Mr. Alston in one of his publications accuses the curators, and with reason, of negligence for delaying to comply with the wishes of the donor. A lady left, in 1837, a sum of £5,000 to establish a similar house at Dundee. But the largest legacy ever left for such an institution is that of the late Mr. Day, of London, who bequeathed £100,000 (or more than two millions and a half of francs) for the foundation of an educational home for the blind, which will be situated in the capital. There is another small school for the

instruction of the blind in London, but the number of pupils is not large. I have not seen it.

In 1835 the late Mrs. Walker formed a school for giving a preliminary education to blind children destined to enter an asylum, and to show how easy it is to establish this sort of house even in the smallest towns. The ordinary number of pupils is eight; sixteen have already received their education there. Children pay three shillings per quarter. The mistress is blind. The expenses of the house are defrayed by Mr. Walker's son and some subscriptions. Reading, writing, arithmetic, and geography are taught there. The children learn to read in a few days; several have been able to leave the school after a few weeks' instruction, being capable of reading with facility.

In August 1837, Mrs. Greig published the prospectus of an institute she intends erecting at Edinburgh for the education of blind children belonging to the upper classes of society. Mrs. Greig herself has a blind child. She has visited nearly all the blind institutions of Great Britain, France, and America, and will adopt the best methods. The first professors of Edinburgh will assist in teaching the various branches of education.

The pupils will learn reading, writing, grammar, arithmetic, bookkeeping, algebra, geometry, geography, history, philosophy, languages, and music, according to their age and capacity.

About the year 1830, Mr. Thomas Lucas opened a small school for the young blind, where he taught reading by his stenographic system of relief-printing, which I mention in the fifth chapter. The class is not large, and the success is ordinary. One of the pupils, after a year's practice, could only with difficulty read one line which I gave him in St. John's Gospel, published by Mr. Lucas, and only succeeded after making frequent mistakes.

Such is the present state of the establishments for the blind in England and Scotland. The incomes of several of these institutions are immense, and the expenses very heavy.

I have calculated what a pupil costs yearly in most of these institutions, and have found that, without computing the primary

materials which he uses in his trade, but including the wages which he receives, and all the expenses of housekeeping, supervision, &c., a blind pupil

			£	s.	d.
in 1835 cost at Glasgow	about fr. 725	.	29	0	0
„ 1834 „ „ Edinburgh	„ fr. 733	.	29	6	5
„ 1836 „ „ London	„ fr. 1000	.	40	0	0
„ 1836 „ „ Liverpool	„ fr. 1105	.	44	0	0½
„ 1836 „ „ Bristol	„ fr. 1138	.	45	10	5
„ 1836 „ „ York	„ fr. 1512	.	60	9	7

I should mention, with regard to this last institution, that the expenses have necessarily been heavier than anywhere else, because of its recent commencement and the small number of pupils. The wise organisation and the talent of the superintendent lead us to hope with good reason that in a short time it will take the lead of the blind establishments in England.

It will be noticed that the economy with which the institutions of Scotland are conducted compared with that of England proves once more the advantage of the asylums over the schools.

However, whatever they may be, whether schools or asylums, the institutions for the blind in England deserve to be taken as a model for establishments to be formed in other countries, and their origin as well as their management do much honour to the country. An inexhaustible philanthropy and lavish subscriptions have permitted of palaces being built for these institutions. But people have had the good feeling not to make lords of this class of unfortunate beings, excepting as regards personal cleanliness, for which the greatest care is taken, and which is not usual in the class to which they belong. The rank of all is shown by their appearance. Their work is unremitting and well regulated ; their clothes are very common and their food wholesome and plentiful, but such as they would always be able to get if their education were successful, and if they should not depart from those orderly and economical habits with which it is continually sought to inspire them.

The blind are very subject to depression and consequently prone to presumption. At some blind institutions there are notices requesting the visitors to abstain from all useless expressions of astonishment at what they see, and of pity for that great number of beings deprived of sight in whose presence they find themselves.

# INSTITUTIONS FOR THE BLIND OPEN OR ON THE POINT OF BEING OPENED.

Names of Towns.	Date of their Foundation.	By whom founded.	Nature of the Institution.	Number of Pupils in 1837.	Age of Admission.	Duration of Course of Instruction.	Branches of Education taught.	Amount charged for Board.	Lodged in the house or not.	Amount of Sales during the year.	Income of the Establishment.
1 Liverpool	1791	Mr. Pudsey Dawson and Mr. ....	Industrial School	108	12 years of age	Not fixed	Music	Not fixed	Lodged	£ s. d. 1818 18 0	£ s. d. 5601 14 04
2 Edinburgh	1793	Mr. David Johnston and Mr. Miller	School and Home ( <i>Asyle</i> )	81	Not fixed	"	Music, Reading, Arithmetic, Geography	3s. 6d. per week	Infants and Girls lodged	1834 2768 4 1	3 45 2 1
3 Bristol	1793	Mr. David Johnston and Mr. Miller	Industrial School	48	From 9 to 30	7 years	Music, Reading	3s. Boys; 2s. Girls	Girls lodged	1838 1138 1 8	See p. 39.
4 London	1799	Messrs. Warr, Beaunequet, Waddington & Houlston	School	122	" 12 to 30	4 to 5 years	"	Not fixed	Lodged	1838 1469 14 1	11,988 1 64
5 Norwich	1805	Mr. Tawell gave the house and garden	School, Hospital	50	Young, 12. Aged, 55	3 years	"	3s. per week	"	1819 230 11 1	1439 4 3
6 Glasgow	1828	Mr. Leitch bequeathed £5000	School, Home ( <i>Asyle</i> )	64	10 to 16. Men any age	"	Music, Reading, Geography, Arithmetic, Astronomy	2s. 6s. per ann.	Infants are lodged	1837 2473 1 0	989 16 4
7 York	1835	In memory of Mr. Wilberforce	School	29	From 9 to 16	Not fixed	Reading, Writing, Music, Geography, Algebra	3s. 6d. per week	Lodged	1836 48 10 1	9002 2 0
8 Manchester	1838	Mr. Thos. Henshaw left a legacy of £20,000	Home ( <i>Asyle</i> )	29	"	"	"	"	"	"	"
9 Newcastle	"	A large sum has been left for a Home ( <i>Asyle</i> )	"	29	"	"	"	"	"	"	"
10 Aberdeen	"	"	"	29	"	"	"	"	"	"	"
11 Dundee	"	A lady left a sum of £5,000	"	29	"	"	"	"	"	"	"
12 London	"	Mr. Day left £100,000	"	—	"	"	"	"	"	"	"
13 Edinburgh	1835	Mrs. Walker	Preparatory School	8	From the most tender age	"	Reading, Writing, Arithmetic, and Geography	3s. per quarter	Not lodged	"	"
14 Edinburgh	1837	Mrs. Greig	School for the rich class	8	From the most tender age	"	Reading, Writing, Grammar, Arithmetic, Book-keeping, Algebra, Geometry, History, Languages, Music	From 50 to 100 guineas yearly	Lodged	"	"
15 Bristol	1830	Mr. Thomas M. Lucas	Reading School	5	Very young	—	Reading and Writing.	—	Not lodged	"	"

There is also a small Industrial School for the Blind in London, which I have not seen.

### CHAPTER III.

#### OF INDUSTRIAL EDUCATION.

WE ought to expect less from a blind person than from one who possesses all his senses ; but owing to an injurious and widely spread prejudice, we exact more. Interest is diminished so soon as we find them only in the same rank with those who can see. They ought, it seems, to surpass the latter ; just as if blindness were an advantage. Most of the institutions have come more or less under the fatal influence of these demands of the public. For, in order to satisfy them, one is bound to make some of the blind pupils do something extraordinary ; and, while trying to show to what a degree of skill a small number may attain, the mass are neglected. The desire was to excite the visitors' surprise and admiration, and these attempts almost always succeeded, either owing to the patience of the masters or the special aptitude of the pupils. The real value of such displays is of little importance. It was desired to astonish, and astonishment has been produced, and that is the only fruit obtained. But we ought not to content ourselves with that. It is far less a question of knowing what some blind pupil favoured by his master and by nature can succeed in doing, as of knowing what we ought to teach him in order that he may employ his time most usefully.

On the choice of trades the future of the institution and the happiness of the pupils depend, and this choice itself depends in a great measure on the nature of the establishment which we form for the blind.

Let us recall the classification I have made of the institutions into schools where the blind are received for a time, but which they leave after their apprenticeship ; and asylums or homes (*asyles*), where the blind after having learnt a trade work together as long as they wish.

It is self-evident that a school can hardly introduce into its course of trades those which demand a large capital or expensive machinery, nor those requiring the co-operation of several persons. Destined to work alone after leaving school, the blind cannot and ought not to learn any trade which cannot be carried on by one person with little capital and simple machinery. This is not the case in an asylum, where sufficient capital and the presence of a certain number of blind who are well taught and trained by long use allow the manufacture of objects needing the employment of several persons and the supervision of some one who can see. There is another consideration which should influence the choice. It is not enough to find out what we can produce; we must see if we are able to sell it. It is necessary to study localities and the markets they offer.

As the asylum at Edinburgh was the first into which a complete and really useful system was introduced, I shall begin the account of the condition of the industry of the blind with that institution.

Nearly one-third of the pupils there are employed in making mattresses of all sorts—of horse-hair, of wool, of a kind of seaweed (*Zostera marina*), and straw.

The horse-hair undergoes at the hands of the blind all the preparation needed before being used. It is bought as it is taken from the horse. The fine and the white hairs are put on one side by workers who have their sight in order to be spun and woven or knitted into gloves for friction. But the blind card it before winding it. It is then boiled so as to extract all foreign bodies, and it is dried in an oven and used for filling mattresses.

Several of these manipulations require little skill or intelligence. The aged blind may be employed at it from the time of their admission and earn a modest salary. The making of these mattresses renders the introduction of weaving possible as a practical resource for the blind. The produce is used in the house, and thus the highest price is obtained. The quantity of wool woven annually in the Edinburgh asylum is from 1250 to

1550 yards, and the blind earn at that from five to seven shillings per week.

The manufacture of mattresses also gives useful occupation to the girls, for they sew the cases. The blind are able to sew : experience proves that, but only the commonest work. It is profitable at Edinburgh, but would not be so except for the mattress making.

This branch of industry is the principal and most lucrative in the asylum, and ranks very high in public opinion ; for all the materials used are of the best quality, and nothing is sold under current prices.

The woollen, seaweed, and straw mattresses are not quite the best things the blind can make, but they sell. The horse-hair mattresses, however, sell the best. Again, it is to facilitate the sale that they make feather beds at Edinburgh. In their manufacture only workers who can see are employed. The directors would gladly relinquish several of these manufactures, but the utility, the requirements of their trade demand keeping them on. For we must sell in order to manufacture, and we must complete an article and be in a position to supply everything belonging to it in order to sell it.

It is impossible to calculate precisely what this labour brings in to each of the blind ; but we are assured that they earn from twelve to sixteen shillings weekly.

The sale of mattresses at Edinburgh during the year 1836 is as follows :—

	£	s.	d.
Horse-hair mattresses . . . . .	736	3	0
Palliasses . . . . .	147	11	5
Woollen mattresses . . . . .	59	9	7
Cotton mattresses . . . . .	52	6	2
Seaweed mattresses . . . . .	37	12	6
Feather beds . . . . .	289	6	5
Total . . . . .	<u>£1,322</u>	<u>9</u>	<u>1</u>

In 1837 only two workmen were employed at Glasgow, and the sales produced £153 5s.



One industry completely suited to the Glasgow asylum is sack-making. A peculiar kind of canvas is woven in the house by the pupils. The girls sew the sacks, and the least skilful amongst the blind print on them the names of the buyers. This manufacture was only begun in 1832, and subjoined will be seen what progress has been made in so short a time. The sales have amounted to as under :—

1832			1833			1834			1835			1836			1837		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
77	5	3				256	0	10	744	14	8	1136	12	1	1134	18	8

It has become the principal occupation at the institution, for twelve men out of twenty are employed at this trade. The salary is eight shillings per week.

Basket-making has been successfully introduced into all the institutions in England. The blind are most skilful at this trade. Indeed, it is the only trade followed at Bristol, because it is the best suited for those who must work for their own profit after their apprenticeship. To the kindness of the superintendent of the Edinburgh asylum I am indebted for the following memorandum of what the blind basket-makers have earned during the year 1836. This is not a memorandum of wages they have received, but of what they have gained, the wages being calculated on what the Edinburgh basket-makers who have their sight receive :—

				£	s.	d.
A	48 weeks' work	} have been long in the Asylum	{	15	14	6
B	50 " "			15	7	7
C	50 " "	} have been 5 years in the Asylum	{	10	8	0
D	43 " "			9	16	11
E	48 " "			9	12	8
F	49* " "			7	10	6

\* Has been nearly six years in the house; but he was nearly forty years old when he entered it.

G	49 weeks' work, 4 years in the Asylum . . .	£	s.	d.
H	50 " " 3½ years " " . . .	5	17	6
J	26 " " half-year " " . . .	1	8	5

At Glasgow, the basket-makers receive up to eleven shillings per week.

The following statement of the salary of the pupils at the Bristol Industrial School evidences the importance of this branch of the work for which the blind are suited :—

STATEMENT OF SALARY OF MALE PUPILS AT BRISTOL SCHOOL  
DURING THREE WEEKS OF THE MONTH OF OCTOBER, 1837.

Pupil's No.	OBSERVATIONS.	Oct. 7.	Oct. 14.	Oct. 21.
1	Aged 21 years .. ..	10 5	11 4	11 10
2	" 17 " .. ..	9 9	10 4	13 2
3	" 17 " .. ..	8 11	8 11	8 1
4	For 7 years in the house .. ..	11 1	10 0	10 5
5	" 6 " " .. ..	2 11	5 0	5 9
6	" 6 " " .. ..	7 11	7 5	7 11
7	" 6 " " .. ..	6 4	6 11	7 1
8	" 11 " " .. ..	10 6	7 7	11 7
9	Aged 42 years .. ..	4 11	4 7	4 8
10	For 10 years in the house .. ..	12 4	10 7	11 2
11	Aged 23 years .. ..	11 4	10 0	10 7
12	For 9 years in the house .. ..	8 8	8 0	8 0
13	" 5 " " .. ..	4 0	4 10	5 0
14	Is incapable of any instruction .. ..	—	—	—
15	For 4 years in the house .. ..	5 6	5 1	5 6
16	" 3 " " .. ..	5 1	5 6	5 0
17	" 6 " " .. ..	8 2	9 3	8 1
18	" 2 " " .. ..	6 5	5 11	5 2
19	" 3 " " .. ..	9 10	8 7	8 3
20	" 3 " " .. ..	5 9	5 2	2 9
21	" 1½ " " .. ..	5 3	5 0	6 2
22	" 1½ " " .. ..	3 11	4 2	5 7
23	" 1½ " " .. ..	0 6	1 2	1 0
24	" 1½ " " .. ..	7 5	6 0	6 1
25	" 1 " " .. ..	3 5	3 3	2 8
26	" 11 months " .. ..	1 1	0 11	0 7
27	" 6 " " .. ..	1 2	0 10	0 10
28	" 7 " " .. ..	4 9	4 5	3 10
29	" 7 " " .. ..	1 2	0 7	0 10
30	" 7 " " .. ..	0 6	0 6	0 3
31	" 5 " " .. ..	1 3	0 11	1 1

materials which he uses in his trade, but including the wages which he receives, and all the expenses of housekeeping, supervision, &c., a blind pupil

			£	s.	d.
in 1835 cost at Glasgow	about fr. 725	.	29	0	0
„ 1834 „ „ Edinburgh	„ fr. 733	.	29	6	5
„ 1836 „ „ London	„ fr. 1000	.	40	0	0
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„ 1836 „ „ Bristol	„ fr. 1138	.	45	10	5
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2 Edinburgh	1793	Mr. David Johnston and Mr. Miller	School and Home (Asyle)	81	Not fixed	"	Music, Reading, Arithmetic, Geography	3s. 6d. per week	Infants and Girls lodged	2758 4 1	3 65 2 1
3 Bristol	1793	Mr. David Johnston and Mr. Miller	Industrial School	48	From 9 to 30	7 years	Music, Reading	3s. Boys; 2s. Girls	Girls lodged	1138 1 8	See p. 39.
4 London	1799	Messrs. Warr, Brasquet, Waddington & Houlston	School	123	" 12 to 30	4 to 5 years	"	Not fixed	Lodged	1836 1469 14 1	11,988 1 6½
5 Norwich	1805	Mr. Tawell gave the house and garden	School, Hospital	50	Young, 12. Aged 55	3 years	"	3s. per week	"	230 11 1	1439 4 3
6 Glasgow	1828	Mr. Leitch bequeathed £3000	School, Home (Asyle)	64	10 to 16. Men any age	"	Music, Reading, Geography, Arithmetic, Astronomy	2s. 6d. per ann.	Infants are lodged	2472 1 0	989 16 4
7 York	1835	In memory of Mr. Wilberforce	School	29	From 9 to 16	Not fixed	Reading, Writing, Music, Geography, Algebra	3s. 6d. per week	Lodged	48 10 1	9002 2 0
8 Manchester	1838	Mr. Thos. Henshaw left a legacy of £20,000	Home (Asyle)	29	"	"	"	"	"	"	"
9 Newcastle	"	" A large sum has been left for a Home (Asyle)	"	29	"	"	"	"	"	"	"
10 Aberdeen	"	" A large sum has been left for a Home (Asyle)	"	29	"	"	"	"	"	"	"
11 Dundee	"	" A lady left a sum of £5,000	"	29	"	"	"	"	"	"	"
12 London	"	" Mr. Day left £100,000	"	29	"	"	"	"	"	"	"
13 Edinburgh	1835	Mrs. Walker	Preparatory School	8	From the most tender age	"	Reading, Writing, Geography, Arithmetic, and Grammar, Arithmetic, Book-keeping, Algebra, Geometry, Geography, History, Languages, Music	3s. 1s. per quarter	Not lodged	"	"
14 Edinburgh	1837	Mrs. Greig	School for the rich class	8	From the most tender age	"	Reading, Writing, Grammar, Arithmetic, Book-keeping, Algebra, Geometry, Geography, History, Languages, Music	From 50 to 100 guineas yearly	Lodged	"	"
15 Bristol	1830	Mr. Thomas M. Lucas	Reading School	5	Very young	—	Reading and Writing.	—	Not lodged	"	"

There is also a small Industrial School for the Blind in London, which I have not seen.

## CHAPTER III.

## OF INDUSTRIAL EDUCATION.

WE ought to expect less from a blind person than from one who possesses all his senses ; but owing to an injurious and widely spread prejudice, we exact more. Interest is diminished so soon as we find them only in the same rank with those who can see. They ought, it seems, to surpass the latter ; just as if blindness were an advantage. Most of the institutions have come more or less under the fatal influence of these demands of the public. For, in order to satisfy them, one is bound to make some of the blind pupils do something extraordinary ; and, while trying to show to what a degree of skill a small number may attain, the mass are neglected. The desire was to excite the visitors' surprise and admiration, and these attempts almost always succeeded, either owing to the patience of the masters or the special aptitude of the pupils. The real value of such displays is of little importance. It was desired to astonish, and astonishment has been produced, and that is the only fruit obtained. But we ought not to content ourselves with that. It is far less a question of knowing what some blind pupil favoured by his master and by nature can succeed in doing, as of knowing what we ought to teach him in order that he may employ his time most usefully.

On the choice of trades the future of the institution and the happiness of the pupils depend, and this choice itself depends in a great measure on the nature of the establishment which we form for the blind.

Let us recall the classification I have made of the institutions into schools where the blind are received for a time, but which they leave after their apprenticeship ; and asylums or homes (*asyles*), where the blind after having learnt a trade work together as long as they wish.

It is self-evident that a school can hardly introduce into its course of trades those which demand a large capital or expensive machinery, nor those requiring the co-operation of several persons. Destined to work alone after leaving school, the blind cannot and ought not to learn any trade which cannot be carried on by one person with little capital and simple machinery. This is not the case in an asylum, where sufficient capital and the presence of a certain number of blind who are well taught and trained by long use allow the manufacture of objects needing the employment of several persons and the supervision of some one who can see. There is another consideration which should influence the choice. It is not enough to find out what we can produce; we must see if we are able to sell it. It is necessary to study localities and the markets they offer.

As the asylum at Edinburgh was the first into which a complete and really useful system was introduced, I shall begin the account of the condition of the industry of the blind with that institution.

Nearly one-third of the pupils there are employed in making mattresses of all sorts—of horse-hair, of wool, of a kind of seaweed (*Zostera marina*), and straw.

The horse-hair undergoes at the hands of the blind all the preparation needed before being used. It is bought as it is taken from the horse. The fine and the white hairs are put on one side by workers who have their sight in order to be spun and woven or knitted into gloves for friction. But the blind card it before winding it. It is then boiled so as to extract all foreign bodies, and it is dried in an oven and used for filling mattresses.

Several of these manipulations require little skill or intelligence. The aged blind may be employed at it from the time of their admission and earn a modest salary. The making of these mattresses renders the introduction of weaving possible as a practical resource for the blind. The produce is used in the house, and thus the highest price is obtained. The quantity of wool woven annually in the Edinburgh asylum is from 1250 to

1550 yards, and the blind earn at that from five to seven shillings per week.

The manufacture of mattresses also gives useful occupation to the girls, for they sew the cases. The blind are able to sew : experience proves that, but only the commonest work. It is profitable at Edinburgh, but would not be so except for the mattress making.

This branch of industry is the principal and most lucrative in the asylum, and ranks very high in public opinion ; for all the materials used are of the best quality, and nothing is sold under current prices.

The woollen, seaweed, and straw mattresses are not quite the best things the blind can make, but they sell. The horse-hair mattresses, however, sell the best. Again, it is to facilitate the sale that they make feather beds at Edinburgh. In their manufacture only workers who can see are employed. The directors would gladly relinquish several of these manufactures, but the utility, the requirements of their trade demand keeping them on. For we must sell in order to manufacture, and we must complete an article and be in a position to supply everything belonging to it in order to sell it.

It is impossible to calculate precisely what this labour brings in to each of the blind ; but we are assured that they earn from twelve to sixteen shillings weekly.

The sale of mattresses at Edinburgh during the year 1836 is as follows :—

	£	s.	d.
Horse-hair mattresses . . . . .	736	3	0
Palliasses . . . . .	147	11	5
Woollen mattresses . . . . .	59	9	7
Cotton mattresses . . . . .	52	6	2
Seaweed mattresses . . . . .	37	12	6
Feather beds . . . . .	289	6	5
Total . . . . .	£1,322	9	1

In 1837 only two workmen were employed at Glasgow, and the sales produced £153 5s.



One industry completely suited to the Glasgow asylum is sack-making. A peculiar kind of canvas is woven in the house by the pupils. The girls sew the sacks, and the least skilful amongst the blind print on them the names of the buyers. This manufacture was only begun in 1832, and subjoined will be seen what progress has been made in so short a time. The sales have amounted to as under :—

1832	1833	1834	1835	1836	1837
£ 77 s. 5 d. 3	£ s. d.	£ 256 s. 0 d. 10	£ 744 s. 14 d. 8	£ 1136 s. 12 d. 1	£ 1134 s. 18 d. 8

It has become the principal occupation at the institution, for twelve men out of twenty are employed at this trade. The salary is eight shillings per week.

Basket-making has been successfully introduced into all the institutions in England. The blind are most skilful at this trade. Indeed, it is the only trade followed at Bristol, because it is the best suited for those who must work for their own profit after their apprenticeship. To the kindness of the superintendent of the Edinburgh asylum I am indebted for the following memorandum of what the blind basket-makers have earned during the year 1836. This is not a memorandum of wages they have received, but of what they have gained, the wages being calculated on what the Edinburgh basket-makers who have their sight receive :—

A	48 weeks' work	} have been long in the Asylum {	£ 15	s. 14	d. 6
B	50   "   "		15	7	7
C	50   "   "	} have been 5 years in the Asylum {	10	8	0
D	43   "   "		9	16	11
E	48   "   "		9	12	8
F	49*   "   "	.	7	10	6

\* Has been nearly six years in the house; but he was nearly forty years old when he entered it.

G	49 weeks' work, 4 years in the Asylum . . .	£	s.	d.
H	50 " " 3½ years " " . . .	5	17	6
J	26 " " half-year " " . . .	1	8	5

At Glasgow, the basket-makers receive up to eleven shillings per week.

The following statement of the salary of the pupils at the Bristol Industrial School evidences the importance of this branch of the work for which the blind are suited :—

STATEMENT OF SALARY OF MALE PUPILS AT BRISTOL SCHOOL  
DURING THREE WEEKS OF THE MONTH OF OCTOBER, 1837.

Pupil's No.	OBSERVATIONS.	Oct. 7.	Oct. 14.	Oct. 21.
		s. d.	s. d.	s. d.
1	Aged 21 years .. ..	10 5	11 4	11 10
2	" 17 " .. ..	9 9	10 4	13 2
3	" 17 " .. ..	8 11	8 11	8 1
4	For 7 years in the house .. ..	11 1	10 0	10 5
5	" 6 " " .. ..	2 11	5 0	5 9
6	" 6 " " .. ..	7 11	7 5	7 11
7	" 6 " " .. ..	6 4	6 11	7 1
8	" 11 " " .. ..	10 6	7 7	11 7
9	Aged 42 years .. ..	4 11	4 7	4 8
10	For 10 years in the house .. ..	12 4	10 7	11 2
11	Aged 23 years .. ..	11 4	10 0	10 7
12	For 9 years in the house .. ..	8 8	8 0	8 0
13	" 5 " " .. ..	4 0	4 10	5 0
14	Is incapable of any instruction .. ..	—	—	—
15	For 4 years in the house .. ..	5 6	5 1	5 6
16	" 3 " " .. ..	5 1	5 6	5 0
17	" 6 " " .. ..	8 2	9 3	8 1
18	" 2 " " .. ..	6 5	5 11	5 2
19	" 3 " " .. ..	9 10	8 7	8 3
20	" 3 " " .. ..	5 9	5 2	2 9
21	" 1½ " " .. ..	5 3	5 0	6 2
22	" 1½ " " .. ..	3 11	4 2	5 7
23	" 1½ " " .. ..	0 6	1 2	1 0
24	" 1½ " " .. ..	7 5	6 0	6 1
25	" 1 " " .. ..	3 5	3 3	2 8
26	" 11 months " .. ..	1 1	0 11	0 7
27	" 6 " " .. ..	1 2	0 10	0 10
28	" 7 " " .. ..	4 9	4 5	3 10
29	" 7 " " .. ..	1 2	0 7	0 10
30	" 7 " " .. ..	0 6	0 6	0 3
31	" 5 " " .. ..	1 3	0 11	1 1

**STATEMENT OF WAGES PAID TO BLIND GIRLS AT BRISTOL  
SCHOOL DURING THREE WEEKS OF THE MONTH OF OCTOBER.**

Pupil's No.	OBSERVATIONS.	Oct. 7.	Oct. 14.	Oct. 21.
1	For 12 years in the institution ..	<i>s.</i> 5 <i>d.</i> 0	<i>s.</i> 3 <i>d.</i> 4	<i>s.</i> 2 <i>d.</i> 0
2	Sickly .. ..	4 6	4 0	4 0
3	Absent .. ..	—	—	—
4	For 6 years in the house ..	4 0	2 2	2 2
5	" 3 " " ..	5 0	1 10	2 6
6	" 2½ " " ..	2 0	2 3	2 0
7	" 1½ " " ..	1 9	1 6	1 9
8	" 1½ " " ..	1 9	1 6	1 6
9	" 1½ " " ..	1 0	1 0	1 0
10	" 6 months " " ..	1 0	1 0	1 0
11	" 6 " " " ..	1 0	1 0	1 0
12	" 5 " " " ..	0 5	0 5	0 5
13	" 5 " " " ..	1 6	1 6	1 6
14	" 5 " " " ..	—	0 2	—
15	" 5 " " " ..	1 0	1 0	0 6

**STATEMENT OF TWO WEEKS' WAGES PAID TO BASKET MAKERS  
AT THE SCHOOL IN LONDON.**

Pupil's No.	Value of the Materials used during the Two Weeks.		PROFIT.	
	1st Week.	2nd Week.	1st Week.	2nd Week.
1	<i>s.</i> 5 <i>d.</i> 3	<i>s.</i> 5 <i>d.</i> 3	<i>s.</i> 11 <i>d.</i> 0	<i>s.</i> 10 <i>d.</i> 6
2	0 11	0 11	1 7	1 7
3	1 11	2 2	5 10	4 4
4	1 4	3 0	2 8	6 0
5	9 4	5 0	18 8	10 0
6	1 10	2 0	3 8	4 0
7	—	—	—	—
8	4 8	3 8	9 4	10 4
9	2 8	2 0	5 4	4 0
10	0 4	0 2	0 8	0 5
11	2 0	2 0	4 6	4 6
12	0 2	0 2	0 6	0 5
13	—	—	—	—
14	3 4	4 4	6 8	8 8
15	0 6	0 5	1 0	0 9
16	0 4	0 3	0 8	0 7
17	1 1	0 11	2 3	2 0
18	2 0	2 0	4 0	4 0

**STATEMENT OF TWO WEEKS' WAGES PAID TO BASKET MAKERS  
AT THE SCHOOL IN LONDON—continued.**

Pupil's No.	Value of the Material used during the Two Weeks.		PROFIT.	
	1st Week.	2nd Week.	1st Week.	2nd Week.
	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
19	2 6	2 4	5 0	—
20	1 10	2 0	3 8	—
21	1 2	2 0	2 4	—
22	—	2 0	—	—
23	—	0 5	—	0 9
24	—	0 5	—	—
25	1 2	1 2	2 4	2 4
26	1 2	3 8	2 4	10 5
27	1 8	—	3 4	—
28	1 10	2 0	0 8	5 6
29	—	—	—	—

Experience has shown that the commonest articles in basket-making are those which the blind make with the most profit. Some superintendents, however, have told me that curious small articles which are well-made sell the best and bring in the most profit. The reason of this appears to me quite clear. These articles are ticketed at a very high price; and the visitor, impressed by what he has seen executed, and in order to show his generosity, wishes to buy such an object as a souvenir of his visit, and does not haggle about the price. Thus these little pieces of work are sold and bring in much, while the ordinary articles, the baskets in common use, are not sold because they are charged above current prices. A worse way of promoting the interests of the establishment could not be devised. True it is that at first its productions are disposed of at a higher price, but this generosity speedily cools. People do not trade in order to lose, and a business man who can procure the article at a lower price elsewhere will not go on paying more to assist an institution. Commerce is selfish. People would much prefer to give away in charity what they have earned than to gain nothing when buying. A spirit of sacrifice in business must not be expected.

The most useful productions next to baskets are mats. This article is very varied. They make mats of rope simply weaved, and rugs to be placed next doors and in passages. Old tarred ropes are used for making these. I have never seen anywhere mats made of rushes. That is a variety to introduce into our establishments. But in the English institutions they manufacture carpets of wool and of aloe leaves, which sell well. It is estimated that this manufacture may give a wage of from ten to fourteen shillings per week ; and, if the produce could be disposed of, it would be the most useful, the easiest, and the most productive occupation.

This article has realised in

					£	s.	d.
1836 at Edinburgh	.	.	.	.	163	4	5
1837 at Glasgow	.	.	.	.	162	5	2

Rope-making has been very advantageously introduced into several institutions, and it is only the want of a covered rope-walk for working in in winter and bad weather which prevents its being introduced almost everywhere. Mr. W. Taylor, superintendent of the blind school at York, has just remedied this inconvenience by inventing a very simple machine for twisting the strands even in a small room. In nearly all the institutions of England the blind are employed in twisting the cords for sash windows. This industry is peculiar to that country ; for windows which open by moving up and down are common there. But in modifying this trade (in Belgium) the blind could twist those girdles the priests wear for securing the alb when saying mass. They could also make very pretty bell-pulls and horse-whips. At Glasgow ten children and six men are employed in making ropes ; and, in 1837, the amount of sales was £438 9s. 11d.

The making of straps for beds and other purposes is a branch of rope-making, and this sort of work can be advantageously introduced into our institutions, especially since Mr. Taylor has invented a very simple instrument for making them. It is, therefore, at York that this manufacture is most perfect.

The blind are able to make boots. Several pupils learn this trade at the institution in London. There may be reasons for training a blind person to this trade, but it cannot be a means for gaining a living. It is true that the boots made can be disposed of at an asylum; for, if they are not elegant, at least they are strong, and that is the most essential quality for the blind. But in London, for instance, it is admitted there is a loss; nevertheless some pupils are employed at it. In 1835 at Liverpool shoes made by the blind were sold to the amount of £93 14s. 7½*d.*; but the materials and the keep of the master bootmaker amounted to £128 1s. 2½*d.*; so that there was a loss of £34 6s. 7*d.* In 1836 the sales amounted to £83 9s. 3*d.*, and the expenses to £144 14s. 9*d.*, thus showing a loss of £61 5s. 6*d.* This result is very unsatisfactory.

Spinning and knitting are useful and productive employments, but suited rather to the young blind, and girls, than to those who have strength to apply themselves to other trades.

The girls have tolerably varied occupations; but it is more difficult to find lucrative work for them than for men. Besides, everything they can produce is sold elsewhere cheaper or better than they can produce it. They make different sorts of fringes; and, if all they are able to produce could be sold, this manufacture would be still more useful.

Sewing is another rather general employment. The girls are able to hem linen and mend clothes. They learn pretty easily to thread their needles, and to sew with regularity; but they, necessarily, work less quickly than those who can see, and can never enter into competition with them. If a blind woman enter the married state, sewing may be very useful to her. In an asylum it may gain a living, but never anywhere else.

In general, there, as in other countries, the blind girls make small articles of fancy work, which are sold in an establishment which is visited, and which excites general interest, but they would not be sold if they were made by isolated persons. In London the girls make very pretty reticules of dyed silk. At

other places, they make little carpets (*tapis*) for lamps, and woollen shawls, which are the admiration of all who see them.

The blind are able to use the spinning-wheel. I have often seen a blind woman spinning with dexterity, lose her thread, find it again, and produce a yarn as neat as a person who had her sight. In London, women spin hemp. They afterwards double their thread, and use it for making cords to window-sashes.

Such are the principal trades I have seen introduced into the establishments for the blind in England. Almost everywhere the blind work nine hours daily after reaching a certain age. If they are employed after those hours, they are paid separately per hour.

## CHAPTER IV.

## OF INTELLECTUAL EDUCATION.

THOSE who can see use the same language as the blind ; but words are the expression of an impression received by the senses, and a great number of words receive their value through ocular impressions. Consequently, the blind cannot always attribute to a word the same value we do ; because they do not know Nature as we see it. If they make use of the same words, those words therefore are signs for other ideas. They express themselves as we do, and think differently ; and if they attach ideas to some words, those words are necessarily more impregnated with their own experience than with our traditions. The remark has been made already by M. Dufau.

“I had often noticed with surprise,” says he, “among the blind a sort of difficulty in expressing themselves, if not accurately and clearly, at least circumstantially, fully, and with copiousness of expression. After having in vain sought the reason from them, it occurred to me,” he goes on to say, “to seek for it in the language itself. On closely examining our languages, I then recognised that almost all the words forming them are made according to impressions conveyed through the eye ; and that it is not merely figuratively that we call speech a picture of the mind, but that it is really an enduring painting offered to our eyes.”

M. Dufau's remark is just, but it is too general. Most words, on the contrary (and this has been remarked by M. Zeune), are founded on touch and motion. Such are the words *comprise*, *express*, *penetrate*, *investigate*, &c. Even when a word relates to the sense of sight, there exists almost always, if not always, another word expressing very nearly the same idea, and which is suited to another sense. For instance, we say : This truth is *clear*, *evident*. But we also have the expression : This truth is *palpable*.



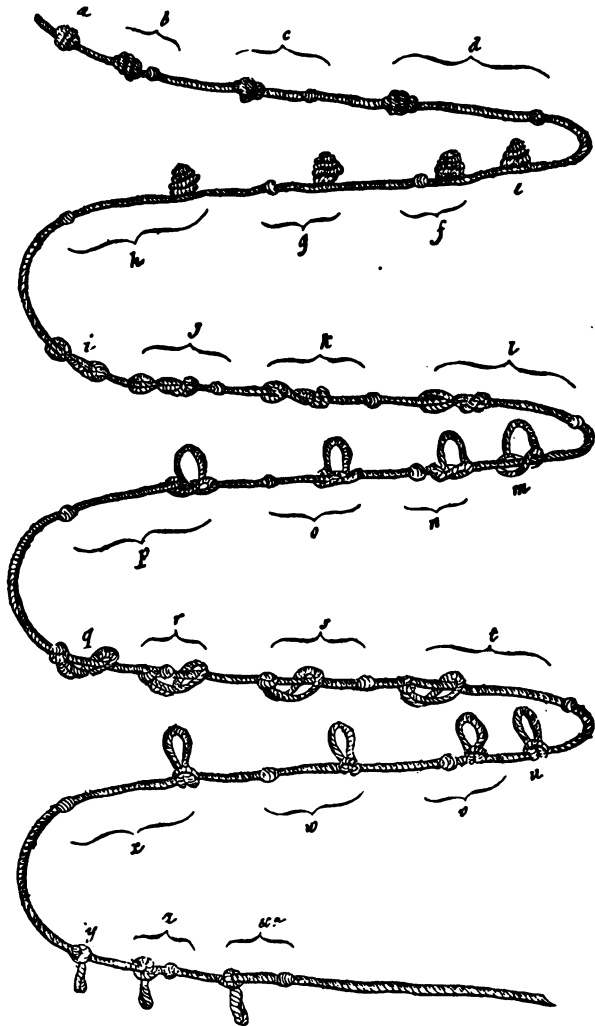
Whatever their number may be, it is indisputable that many such words exist which have no meaning for the blind until they have been translated, so to say, into words which fall into the sphere of senses they enjoy. The intellectual education of the blind should therefore require a course of terminology. Other children understand language like us ; words have for them the same meaning as for ourselves. We can make use of this intellectual instrument without previous study, and put ourselves in communication with the disciple by its means. But before being able to use it with the blind, we must be sure that they understand it as we do. It is true that the blind make this translation themselves as far as they can, and often very happily. "When I find myself in a vast plain," said a blind man, raising his hand to his ear, and stretching out his arm with an expressive gesture, "it seems to me that I am *out of hearing*." This is a translation into the blind language of our *out of sight*. Another blind man, who found his way unassisted through the most crowded streets with the greatest ease, said that too loud a noise completely bewildered him, and he explained this by saying that he was obliged to *listen to himself walking*. "I understand," says M. Dufau, who relates this anecdote, "that being no longer able to hear, because of the noise, he was *dazzled*." But instead of waiting until a blind man has found for himself some happy synonym which makes him understand one of our expressions, this synonym ought to be shown to him practically beforehand. We ought to agree first of all on the expressions before using them as conventional signs. Otherwise the master will find himself stopped in his explanations, and will never be able to satisfy himself that he has given correct notions and plain ideas.

This instruction would be peculiarly facilitated by the education of their senses. By exercising their taste, smell, touch, and hearing, those senses would acquire an accuracy they have not. This is what M. Dufau calls a course of tactility, and it is practised in Germany and America with great success. By increasing the power of those organs the nature of a multitude of objects would be better understood by the blind, and the

terms of comparison between what we see in them and what they are able to discover about them would be rendered easier.

Nothing of the kind has been introduced into the institutions in England. Praiseworthy attempts are made in the institution at York and in Scotland to render the education of the blind less material, but much remains to be done. In England one is generally satisfied to teach the blind what is immediately applicable, what is really necessary. In fact, a primary instruction is what is deemed useful to make intelligent artisans and not savants of them, and this is much more advantageous to the blind themselves. If there are exceptions to this rule, they are only to be found in the higher ranks of society. Mr. Little-dale, a blind man and a pupil of Mr. Taylor, has become a remarkable man owing to his acquirements. He has a large fortune, which he employs in promoting the sciences and the happiness of his brethren in misfortune, and, in order to be better able to do so, he has chosen his residence next to the Blind Institution at York.

As I have already stated, there are institutions which admit the young blind and give them an intellectual education before initiating them into manual occupations. Other institutions there are which give no instruction and only employ the blind in manual labour from their admission. The system of the Edinburgh Asylum seems to me preferable to all the others. Young pupils are admitted there, and they receive instruction which occupies most of their time. The aged blind are not altogether neglected. At the suggestion of the worthy secretary, Mr. Johnston, the directors pay some one who has his sight to read to them every evening for an hour or two. The home subscribes to a reading library which contains nearly twelve thousand volumes. The blind themselves select the books, which are generally serious or historical works. This reading of an evening has given them a desire to have more. So they have of their own accord determined only to take twenty minutes to their breakfast and their dinner, and to utilise the time remaining before work in listening to the reading of some interesting book.



THE KNOT ALPHABET.

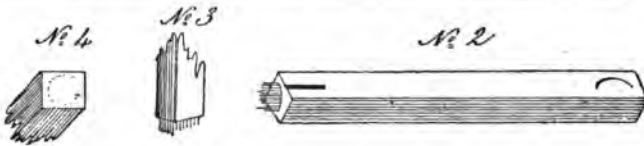
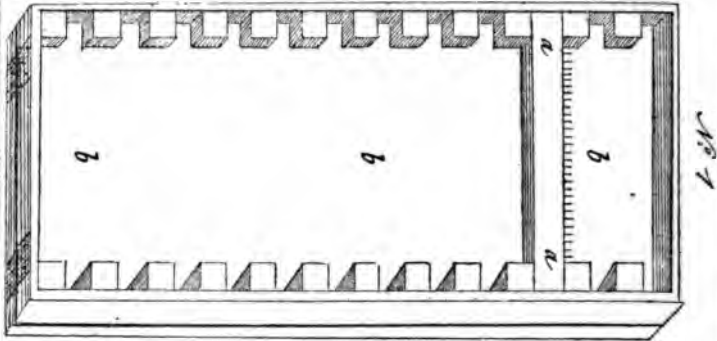
They even have a newspaper twice a week, and political questions are discussed there as warmly as in any other meeting in Scotland. In this way the blind, while they are resting, pass agreeable and useful hours, and thus their conversation is generally more interesting than we hear from people of their station.

Hitherto the reading of books in relief has not been taught at Edinburgh ; but the pupils are taught to spell from memory, and this is no doubt advantageous for teaching them afterwards to read the books in relief if desired. Before the printing in relief had begun, David Macbeath and Robert Milne, two blind men belonging to the Edinburgh Asylum, invented a kind of writing in knots, which is no longer of any use, but is, nevertheless, very ingenious. Seven different knots, which, by means of an additional knot, form seven classes of signs, express the whole alphabet. To avoid a description, which must necessarily be obscure, of this curious attempt of the blind to procure a means of communication, I have had it engraved.

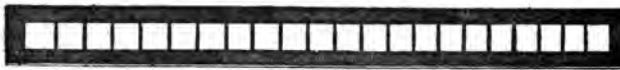
There is only one institution in England of any importance in which writing is taught in the sense we attach to this word. The machine used is very simple. The pupil writes with a pencil or an iron stylus and blackened paper. The hand is guided by threads stretched to show the width of the lines. If the letter has a projection above or below the line, the pencil or stylus makes the thread yield and prevents the blind person from tracing too large letters and losing the line, for the thread goes back to its place.

The blind person cannot read the letters he has written in this way. In order to remedy this inconvenience, Mr. T. Lucas makes the pupils write on sheets of lead as thin as paper. The letters are impressed on the reverse side of it by means of a stylus. Leaden books would form a curious variety in bibliography, but unfortunately there are none. Mr. Lucas has succeeded in having some words written on these leaden sheets in order to prove that this kind of writing is possible, which no one doubted, but for practical purposes it is utterly useless.

WRITING MACHINE.



N° 5



SPECIMEN OF WRITING.

JOHNST CLAIR

In 1827 Mr. G. Gibson, of Birmingham, himself blind, invented an assortment of types, by means of which a blind person is able to write or rather to print his thoughts, to re-read them and communicate with those who are absent. His apparatus consists of a number of wooden cubes having at one end the form of the letters represented in relief by pins' points projecting about one-tenth of an inch, and the outlines of the same letter roughly cut at the other end. This enables the blind to distinguish the letter which has to be used without danger of being hurt.

The pointed letter is the printed character reversed. The engraved plan of this machine gives a tolerably correct idea of it. No. 1 shows the plan of the instrument, or rather of the frame. The paper is placed on *b b b*. The rule marked *a a* is moveable, and serves to guide the hand in placing the cubes, and the points on it are to fit into the small groove traced along the lower side of these cubes. By means of this point the necessity is avoided of always having two letters placed on the paper at the same time. The index-finger will only have to mark the point which has already received its letter. The only inconvenience of this way of proceeding is that all the cubes must be made the same size; but this inconvenience is largely compensated.

A similar writing is used in the Establishment for the Blind at Berlin. The diagram next page shows the letters and signs employed. It seems that the process has already been long known in this institution. I do not, however, know for certain that Mr. Gibson's invention is later than that of Berlin, and it is really of little consequence.

Mr. John St. Clair has invented a still more simple instrument for his own use (see No. 5 opposite). Square openings in a metal ruler serve to guide the hand in tracing with a pencil or stylus the form of the letters, which are nearly the size of capitals, as may be seen in the accompanying specimen of this writing.

Lastly, Mr. Gall, of Edinburgh, has invented a very ingenious little instrument which he calls a typhlograph, and by means of which the blind are able to write as well as those who can see.

A L P H A B E T

D E

B E R L I N

A B C D E F G H I

K L M N O P Q R S

T U V W X Y Z , ' )

· 1 2 3 4 5 6 7 8 9 0

\ 2 3 4 5 6 7 8 9 0

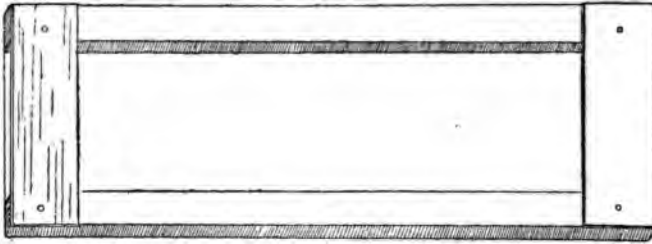
It consists of a board on which the paper is put ; (2) a slide with two branches (see the engraving next page, No. 1) ; and (3) a guide for the stylus or the pencil, No. 2. This guide is a small piece of copper, narrower than the space between the two branches of the slide and placed crosswise on a small piece of wood, which allows of raising or lowering it to form the various projections of the letters. At one end of this small piece of copper is an oblong opening with a small stop at one side. By raising and lowering the guide, letters may be traced in the hole that is in it without lifting the stylus or the pencil (see specimen No. 4).

The blind are very fond of arithmetic. Mental calculation is carried to great perfection by some blind persons. Several pupils, especially in the institutions of Germany, are able to solve the most complicated mathematical problems without any assistance from signs and more quickly than savants. This, however, is not sufficiently general to enable us entirely to dispense with notes. Mr. Saunderson, a blind man but Professor of Mathematics at Cambridge University, was the first who conceived the idea of an arithmetical board. Dr. Moyes, another blind man, proposed one which appeared to be more perfect ; but all have been forgotten since David Macbeath's invention of which I have spoken. This blind man deserves to be known. He was a dwarf of four feet six inches, but was not deformed. When thirty years of age, he was like a child of ten or twelve. Notwithstanding his misfortune, Macbeath had attained such a degree of culture as made him distinguished. He was received into the asylum at Edinburgh in 1809, and there he soon attained to the position of professor to his fellow blind pupils ; and which he continued to occupy until his sudden death in 1834. The board for teaching arithmetic which he invented is a frame pierced by several rows of square holes. The figures are marked on it by two square leaden pegs differently marked at their extremities. Each peg can be placed in four different positions. One of the characters indicates the odd numbers, 1, 3, 7, 9 ; and the other the even numbers, 2, 4, 6, 8. The second peg marks 5 or 0 according to its position. These two characters suffice for

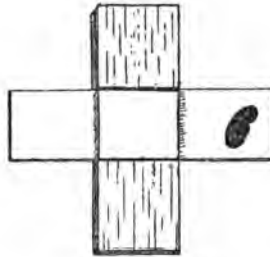


TYPHOGRAPHY.

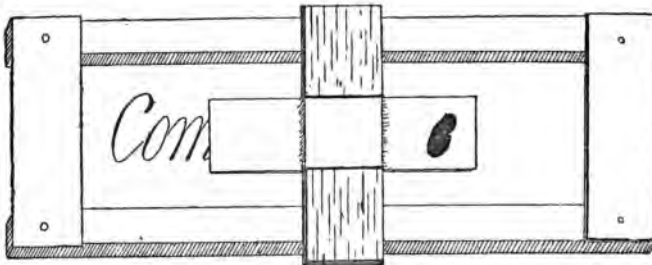
N<sup>o</sup> 1



N<sup>o</sup> 2.



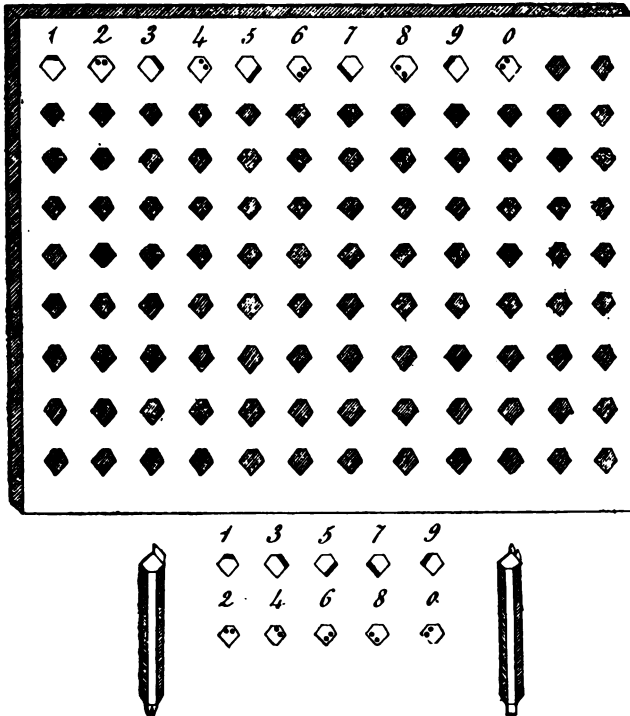
N<sup>o</sup> 3.



N<sup>o</sup> 4

Commandment

all arithmetical operations, and render them easier than if the blind were obliged to use ten special marks. One of Macbeath's pupils, named William Long and teacher of the young blind at Glasgow, had the happiness of perfecting the board which his master had invented by making the square holes into pentagons. One single peg diversely placed now suffices for calculating, and



CALCULATING BOARD FOR THE USE OF THE BLIND.

the blind learner no longer loses his time in searching for his notes. I have had this board engraved, and it is so simple that the manner of using it can be understood on the first inspection.

As it is useful to be able to write or mark the different algebraical signs, Mr. W. Taylor, whom we are sure to meet when any improvement remains to be introduced, proposed the

characters I have had engraved. The numbers 1, 3, 5, 7, and 2, 4, 6, 8, are noted as in Macbeath's board by the different positions of the two projections of the peg No. 1. The numbers 9 and 0, as well as the signs + (*plus*) and - (*minus*) and the letters W, X, Y, Z, are marked by the different positions of the two ends of the peg No. 2. He has preferred the square hole, the sides of which are more easily distinguishable than if they were pentagons. Besides, the pentagons would not have reduced the number of pegs, two of them being absolutely necessary. There is a groove between each range of holes. It is not deep, and is narrow, and is made to receive an oblong four-cornered piece of card for separating the sums. The example No. 5 contains an algebraical operation which will illustrate the use of this board.

Various other modes of calculating have been proposed, all offering more or less advantages. Mr. Gall has invented one requiring neither board nor pegs. All the numbers are represented by means of one or two pins diversely placed on a cushion or a mat, as may be seen in No. 4 of the engraving on p. 64. In case of necessity one's coat would suffice, and a blind person can in this way make calculations wherever he may be.

The terrestrial globes in use at the institutions in Edinburgh and Glasgow have no peculiar features, and the geographical maps are ordinary maps to which thin cords have been affixed, marking the boundaries of countries, the courses of rivers, and in which pins' heads or nails have been put to show the situation of towns. Mr. Gall has presented to the Edinburgh Society of Arts maps printed in relief, and has even received the silver medal for his invention. The earth is raised a little above the sea, and the boundaries of kingdoms are marked by a line of dots. The names of countries as well as of capital cities are written in black and by hand. Mr. Taylor has published a very neat map of England and Wales. It is made by means of a strong pressure brought to bear upon a sheet of paper placed on a copper plate engraved in cavities; dots mark the capitals. These maps are far from being as perfect as those made in America. One small map of Western Flanders of my own invention has gained the

approbation of all the teachers in England. "This map is only an experiment, on a space smaller than an octavo sheet ; it gives the names of eleven towns, the name of the province, of the bordering districts, &c., and the position of the principal parishes of the province ; the canals are distinguished from the rivers. I shall add the population to the names of the towns in the maps which I am going to make by the same process.

I saw at Glasgow a representation in relief of the comparative length of the principal rivers, and of the height of the principal mountains and the most remarkable buildings of the world compared with the height of the house they live in.

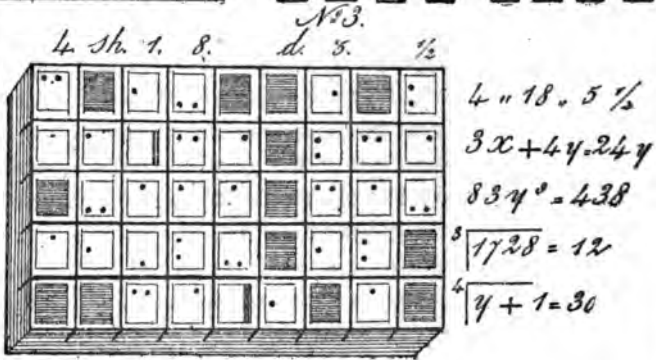
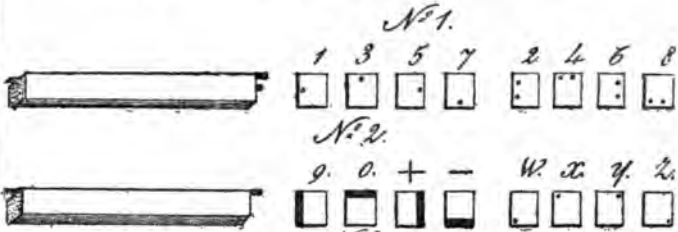
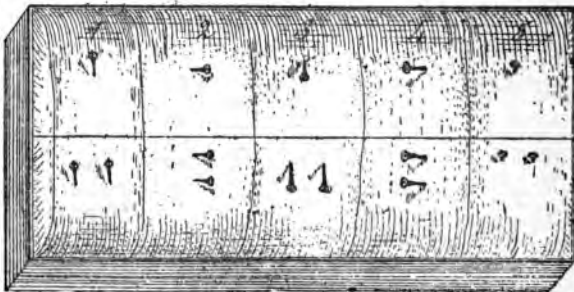
The science of astronomy is not entirely alien to the blind. After an approximate idea has been given them of the height of some terrestrial creations, they are made to understand what an insignificant portion our earth occupies in the general system of creation ; and the life (*mouvement*) of the heavens and the position and comparative size of the planets are explained to them by a planetary instrument. Very little time, however, is lost in explaining to them these beautiful objects scientifically ; and, in general, all these articles and machines are considered, even in the institutes, rather as being curious than useful.

An elementary knowledge of geometry is more useful. As the blind only know the relations of geometrical quantities by touch, this knowledge must necessarily be very limited, incomplete, and inaccurate. Mr. W. Taylor therefore believed himself well justified in publishing the figures of Euclid's elements as far as the 48th proposition. The relief is produced on the paper by a strong pressure upon a plate engraved in cavities. Mr. Howe has since published the figures of Euclid's elements, and there is another edition published at the institution in Paris.

Music is taught in several establishments as an useful profession. Various pupils have already succeeded in obtaining advantageous positions as organists. The art is learnt by principles, and the method of teaching differs in no respect from that for persons who can see.

M. Haüy at first combined the musical characters fit to

## MR. W. TAYLOR'S (OF YORK) ARITHMETICAL BOARD.

*N<sup>o</sup> 4.*

represent on paper and in relief all possible features of the art, and succeeded in making musicians. Mr. Tansure proposes in his *Musical Grammar* to use a not very complicated machine, the plan of which may be seen in the article "Blind" of the *Encyclopædia Britannica*. The board is three feet long and nine inches wide. The spaces are marked in relief, as they are traced on paper for those who see, by flat lines. The necessary lines above or below the ordinary spaces are shown by rounded lines. Holes pierced between and upon these lines receive musical notes of the ordinary form, or arbitrary notes as is the practice elsewhere. Mr. Cheese has considerably improved this board for writing music by substituting, for the ordinary or other notes of lead or wood, which would necessarily occupy much space, a pin, with or without a head, the end of which is diversely turned. In this way he has succeeded in giving thirty-two different forms to a pin, twelve of which however suffice for his teaching.

Mr. Gall, of Edinburgh, finds the great advantage of writing music by numbers. The gamut is represented by 1, 2, 3, 4, 5, 6, 7 for the twelve octaves; so that the first note in each tone is expressed by 1, that is the clef which modifies all. If the notes descend below or ascend above the octave, they are marked by a comma turned upward or downward according to the nature of the notes requiring this sign. A colon marks the notes which ought to be pointed. The parenthesis ) marks the flat and the parenthesis ( marks the sharp. A space left between the notes marks the time.

The value of the notes is shown as under :—

Semibreve	1 . —	2 . —	3 . —	4 . —	&c.
Minim	1 —	2 —	3 —	4 —	&c.
Crotchet	1 ...	2 ...	3 ...	4 ...	&c.
Quaver	1 ..	2 ..	3 ..	4 ..	&c.
Semiquaver	1 .	2 .	3 .	4 .	&c.
Demi-semiquaver	1	2	3	4	&c.

In this way music written with letters in dots or impressed would take up little space.

Even pins would suffice for the writing ; and if a cord were stretched upon a cushion, the notes of the gamut being written on the cord, those of the other octaves could be written above or below the line as required.

The desire of procuring for the blind the means of writing music has led to seeking other methods. Don Isern, a nobleman of Catalonia, received in 1827 a silver medal from the London Society of Arts for the invention of a machine which does not appear to me to satisfy the conditions such an instrument ought to possess ; for the blind cannot read what has been written by this machine.

Whatever process may be invented, music readable for the blind will only be readable while they are singing. The hands being occupied in all other kinds of musical execution, the parts must be entrusted to the memory, and the memory of the blind is astonishing in this respect.

The method most used for teaching them pieces of music is to read to them the musical phrases by sol-fa-ing them. As soon as the first two or three bars are impressed on their memory, the reading is proceeded with, and in a short time the most complicated pieces are learnt and executed.

In England it is not thought proper to teach the blind any other instruments than the organ or piano, for fear of making them itinerant musicians, and exposing them to degradation by frequenting meetings of low people.

A short course of natural history would no doubt be of great use to the blind, and would have the advantage of pleasing them. Most persons born blind have no idea of the commonest animals. One of my pupils, eleven years old, had never touched a hen. Great was his delight when I gave him one to touch for the first time. Museums of stuffed animals have been formed in some institutes of Germany with the intention of making the animal kingdom known to the blind. But, apart from the fact that such collections cost sums of money seldom at the disposal of these institutions, and of which they could make much better use, they would only be of service while the blind are in the establishments.

So it would be useful to improve upon Mr. Gall's essay in relief-printing, and print in relief the forms of some animals with explanatory text. The outlines of the specimens published by Mr. Gall are not sufficiently defined.

Such is the plan of intellectual instruction for the blind in the institutions of England. It is yet far from the degree of perfection which will no doubt be reached in a few years ; but it already undoubtedly contains the germ of all that is useful and necessary ; and if prudence prescribes to directors a wise hesitation in adopting new systems, they have generally a sincere desire to accept every improvement, the reality of which has been proved by experience.



## CHAPTER V.

## OF PRINTING IN RELIEF.

FOR the blind reading is not only a means of instruction—it is also an employment. To employ the blind is to divert them and to make them relatively happy. It is not likely that we shall ever succeed in printing for the use of the blind in such a way as to enable them to read as quickly as those who can see. The eye sees at once a group of letters which the finger can only pick out one by one. The difficulty then is with the reader, and not in the book ; and doubtless art will never replace that of which nature or misfortune has deprived the blind.

But I do not know if, in the case given, the powerlessness of art be not an advantage. Reading employs a blind person agreeably, and, as it is slow, a single book may occupy him a long time. It is right that it should be so ; for the number of books printed in relief will always be necessarily limited. The book trade will not speculate in this kind of printing on a large scale, because the number of blind readers being very few in comparison with others, the price would be too high for this generally poor class.

The slowness of reading amongst the blind arises too from the difficulty of recognising the shape of each individual letter ; and this difficulty sometimes makes reading repulsive and quite impossible. Therefore the selection of an alphabet is sufficiently important to deserve a searching discussion.

The discovery of printing in relief, moreover, is one which everybody is astonished at not having made the first. A sheet of printed paper forcibly pressed in the printing machine and showing the letters in relief ought to suffice to give the idea to every printer. The glory of this discovery belongs to France. M. Valentin Haüy tried it the first and succeeded. He successively used types of different sizes, and finally adopted one which

Specimen  
d'impression en  
relief de l'insti-  
tut de Paris

A B C D E F G H I K  
L M N O P Q R S T U V  
W X Y Z

a b c d e f g h i j k l m n o  
p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0

Imprimé à bruges

seemed to keep the proper medium amongst those the blind are able to touch, according to the degree of delicacy of touch which nature has given them, or which age and labour have left them. These letters are pleasing to the eye and differ very little from the ordinary form, as may be seen from the accompanying specimen (see preceding page). No important change has been made since M. Haüy's alphabet; but long experience has already produced the conviction that the alphabet does not fulfil what was expected from it, and the blind did not preserve the delicacy of touch necessary for continuing to read the Paris printing. But the books had been printed in quantity and in different languages; for it had been expected that this institution, having been the first and the model on which others were formed, would also become the chief dépôt from which all printed productions for the use of the blind would be taken. This expectation was not realised. The great expenses incurred cooled the zeal of those who had taken an interest in this industry, and rendered all subsequent attempts to improve that kind of printing impossible.

At first the letters had the parallipedal form of ordinary printing. The blind set up [the type] in a case sheathed with a copper bottom and pierced by several rows of little holes. For printing in relief a wooden press was used like those employed for pressing out oil, pressing cloth, &c.; but however little was the height of the plate, the tablet which ought to produce pressure on the paper was not equally pressed by the screw, and the sides were found to have received less pressure than the middle. This it was which originated the cylinder press made in 1784 by M. Beaucher, a locksmith and engineer. This press was very like that used by copper-plate printers. A lever moved the cylinder, which, rolling on the plate, exercised a successive pressure and produced a bad impression, because the paper was displaced by the rolling of the cylinder.

M. Clousier, printer to the king, thought that a perpendicular pressure on a whole sheet at once would be preferable to successive pressures. He used his ordinary presses for printing in relief and was perfectly successful, according to M. Guillié's

avowal,\* who, however, again introduced, about 1820, the cylindrical press in use until now in the Paris Institution.

The type at present in use is in the form of a hammer. The letter which has to be printed in relief rests on a transverse part, the object of which is to stop the letters which are placed on the composing stick or case leaded in wood. Such is the state of the art in France. Satisfied with the glory of this discovery, they do not seem to care to improve upon it in the least, and since its invention it has remained almost stationary.

Some experiments were made in Austria which were not unsuccessful, but it is in England and America that the art has progressed, principally owing to the disinterestedness of Mr. Gall, of Edinburgh, to the zeal of Mr. Howe, director of the Boston Institution, of Mr. Alston, treasurer of that at Glasgow, and to several other philanthropists. In order to unite and direct all these hitherto isolated efforts, the Edinburgh Royal Society of Arts in 1832 conceived the happy idea of proposing, as a subject for one of its annual prizes, the suggestion of a better alphabet for the use of the blind. The competitors were required to state what should be the shape and height of the letters or characters, and how many of them ought to be used to form a general alphabet for the use of the blind of Great Britain and Ireland, and, in the second place, the best and least expensive method of printing in relief with characters or letters in such a way as to allow of their being easily and rightly ascertained by the touch.

Every suggestion was to be accompanied by a specimen in relief.

The Society's appeal was heard. Six competitors sent in alphabets, and the examining committee decided, after consulting competent judges, that the system of signs invented by Mr. Hay, which I shall explain presently, merited the preference in all respects to that of Paris and Mr. Gall's, of Edinburgh; and, consequently, that Mr. Hay's system was worthy of the Society's encouragement and support, and the more so because he had already incurred great expense.

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\* Essay on the Education of the Blind. By M. Guillié. 3rd edition. 1820. Page 158.

The committee, however, remarked that, while recommending Mr. Hay's alphabet, it in no wise intended to propose it as an alphabet for the blind to be adopted definitely without further investigation. The matter seemed to it one of too great importance. It recommended that the attempts be continued and correspondence opened with all the institutions for the blind in order to obtain uniformity.

Following the views of its committee, the Society judged it expedient to obtain further information, and once more offered its gold medal of the value of twenty guineas for the best essay on the subject.

Fifteen other alphabets were received from different schools in England, some of them accompanied by physiological and philological remarks of the greatest interest, and which I was able to examine during my stay in Edinburgh.

Twelve of these alphabets consisted of very arbitrary characters ; the other three were simply modifications of Roman and Italian characters. The first question to be decided was : If an arbitrary alphabet was to be adopted, or if a common alphabet with modifications would be sufficient ? I shall give the arguments in favour of each opinion, and, in order to complete the discussion, I shall state at the same time all that has hitherto been attempted in this matter.

Amongst nearly all civilised nations words are composed of letters. But letters are not absolutely necessary, as the Chinese language proves, in which all words are represented by arbitrary signs. In our languages also, although we have letters, several words are quite arbitrary signs, and are, indeed, pronounced quite otherwise than they are written. For instance, the English words *bought*, *taught*, and *rough* are pronounced baut, taut, rof (*sic*, ? *ruff*), &c. So it is in the French language and in most of our languages. We pity the Chinese who have to commit to memory twenty thousand characters before they can hope to attain to any dignity in the empire, but the European languages often present as many difficulties. At least, the Chinese signs for words never vary, whereas our letters change their sound



l.	d.....	men.
ure.	K.....	tion.
low.	J.....	cious.
il.	V.....	ere.
sh.	7.....	les.
athe	3.....	ment.
hep.	J.....	anti.
hunch	=.....	con.
lid.	d.....	dis.
ices &c.	1.....	inter.
acy.	\.....	com.
ample	h.....	pro
he.	z.....	pre.
ing.	6.....	sub.
ble.	x.....	super.
ness	Ti.....	trans.

every instant. Thoroughly to realise these difficulties, let us suppose an Englishman wishes to pronounce the word *pharmacy*, which he meets with for the first time, and let us see how many chances he has of making a mistake. This curious calculation was made by the director of the institute at New York.

The letters *ph* separated or joined may be pronounced in 4 different ways, the letter *a* is pronounced in 8 ways, the three first letters therefore may be pronounced in 32 ways; the letter *r* has two sounds, which doubles the different sounds; each of these 64 ways of pronouncing the first four letters therefore admits of two more variations, or 128; *a* is pronounced in 8 ways. On multiplying 128 by 8 we have 1024. In the English language the letter *c* has five sounds: 1024 multiplied by 5 make 5120. The letter *y* is pronounced in 3 ways, from which it follows that a child, after having learnt the exact pronunciation of each of the letters forming the word *pharmacy*, has 15,360 chances of making a mistake. In this manner we may be assured that our system of writing sounds is quite calculated to embarrass him who wishes to learn it. But it is a case decided, and those who see and understand must put up with these difficulties, or cannot hope to enter into communication with society or to profit by the experience to be found in books. But it is not the same for the blind. Books ought to be printed exclusively for their use; and (says the director of the New York Institute) it matters little whether or no they who see can read these books, provided that the blind understand them perfectly. These reasons have induced him to propose a way of writing the sounds of the language, which will obviate to a certain extent the inconveniences he has mentioned. We know, says he, exactly how to express with our characters the word *beau*, *belle*, by the letters *bo* and *bel*; but we have more simple or elementary sounds than letters. So he has formed his alphabet of forty-one characters whose sounds never change, and which represent all the elementary sounds of words. Thus a person who knew these signs could spell almost all the words in a language after a few hours' practice. Besides, by printing with these characters the number of volumes



would be considerably reduced, the more so because he proposes abridged signs for a certain number of prefixes and affixes. I give the alphabet as the author has proposed it, applied only to the English language, because I am of opinion, for the reasons stated, that it is far from possessing the conditions demanded for obtaining the result we ought to expect.

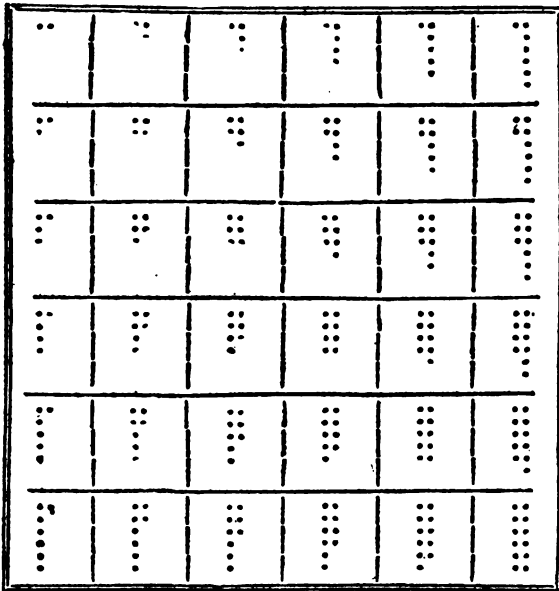
Another still more ingenious process was invented by M. Barbier. The blind only understand sounds, and the difference between written and spoken language must hinder them much in learning to read. He therefore considered that a system of notation, which should faithfully represent the vocal sounds, would greatly simplify the matter. As they cannot read our writing nor our ordinary books, and as books for their use must be printed in relief, why (asks M. Barbier) not choose characters easily recognised by the touch, and at the same time in harmony with the words? So he has substituted the orthography of sound for grammatical orthography. The dot only enters as an element into M. Barbier's system. At first the author had divided all the sounds, vowels, and consonants, into horizontal ranks of six characters each.

1st line	a	i	o	u	é	è
2nd line	an	in	on	un	eu	ou
3rd line	be	de	gue	je	ve	ze
4th line	pe	te	que	che	fe	se
5th line	le	me	ne	re	gn	l <i>liquid</i>
6th line	oi	oin	ien	ste	x	ment

The consonants are articulated as if they were followed by an *e* mute ; but this letter is not written.

Each letter was represented by two perpendicular rows of dots. The first row showed the number of the horizontal line ; the second showed the place this sound occupied on the line.

In this manner :—



The only instrument is a rule in the centre of which are drawn six parallel lines sunken into the wood ; on this is placed the paper, which is held by a kind of clasp, or on which was placed a small flat copper rule pierced with squares.

As abbreviated writing M. Barbier's system was more ingenious than rapid. Its author, therefore, soon thought fit to introduce considerable alterations, and he found means to represent all the sounds and articulations by *three* dots placed in different positions. This is how he proceeds to obtain a result which at first seems so surprising. He first of all divides his *pronouncing alphabet*

(vowels and consonants) into five horizontal rows instead of six, as he had first done.

Each series is represented by a special mark formed of two dots. For instance, the first, which is composed of vowels, is represented by two dots placed perpendicularly (:); the second, composed of nasal vowels, is represented by two dots placed obliquely (·.); the third, which is composed of a first line of consonants, is denoted by two dots placed horizontally (..), &c. Thus, as may be seen, we have the means of representing the series; but each series is composed of six letters. The author fixes the rank of the letter which is wished to be put in the series by means of a third dot combined with the second. For instance, *o* is the third of the series. I begin then by showing the series by means of two dots (:), and I shall show the rank of the letter by means of a third dot, which shall be combined with the lower dot of the figure I have just drawn so as to present the two horizontal dots which belong to the third series (.:); the series and the rank are found in the manner shown, and the letter *o* clearly marked. The pupil need only know exactly the order in which the letters in the alphabetical table are ranged.

In this form M. Barbier's ingenious system has obtained the approval of the Paris Academy of Sciences. Three reports made in the years 1820, 1823, and 1830, at the foot of which are placed names which alone are a sufficient guarantee—those of Cuvier, Lacépède, Ampère, and Molard—authenticate this high approbation. They explain, too, M. Barbier's ulterior object, which is to give the blind books which they themselves have printed. This relief-printing neither requires a case nor moveable type, and would be always composed in a simple and uniform type. In order to obtain this result M. Barbier has had little quadrats (*cadratins*) cast, which have at one end a cross stroke and at the other a straight stroke. The first sign may take four positions according as the convexity is turned downwards, to the right or to the left. The second sign may have two positions, a horizontal and a vertical. On combining these two quadrats we are able to show, agreeably to the system I have just explained,

by the one the horizontal rank and by the other the rank of the letter in the series. The process, as we see, requires little skill, and could easily be learnt by all blind persons.

Sonographic writing has drawbacks, as M. Louis Braille, tutor at the Paris Institution and himself blind, has partly anticipated by adapting to each of his letters a suitable sign formed of a certain number of dots arbitrarily placed.

Below are the ten primitive signs.

• | : | •• | ∴ | ∙ | ∴ | ∴ | ∴ | ∙ | ∴

The first four series (as shown in the engraving of M. Braille's alphabet, p. 79) are formed by adding another dot to these dots, either to the left or to the right, or perhaps two dots. The machine used in this system only contains three grooves instead of six.

M. Braille has at the same time shown how to print music by means of dots.

The notes C, D, F, G, A, B are represented by the following signs :—

∴ | ∙ | ∴ | ∴ | ∴ | ∴ | ∙ | ∴

We can place these notes in seven different octaves, which are easily distinguished from each other. Here is C with seven octaves beginning with C counter-bass :

∴ | ∴ | ∴ | ∴ | ∴ | ∴ | ∴

Consequently the F of the clef of that name, in the process used by persons who can see, will be represented by ∴ ∴ ; the C of the clef of that name by ∙ ∴ ; the G of the clef of that name by ∙ ∙ .

If there be several consecutive notes belonging to the same octave, it suffices to write the indicator sign of the octave before the first of these notes.

The natural, the flat, and the accidental sharps are respectively

marked by the signs ` . , : . , ' : , placed before the note ; the double sharps and the double flats are shown by the sign of the sharp and flat repeated.

The semibreve is shown by the two dots of the third series placed below the note ; the minim by the dot of the second series ; the crotchet by the dot of the fourth series ; the quaver is recognised by the white or blank space below the note.

EXAMPLE :

C semibreve	: :	C minim	' :
C crotchet	: :	C quaver	' :

The semiquaver, the demi-semiquaver, the quadruplet, and the quintuplet are respectively indicated as the semibreve, the minim, the crotchet, and the quaver. This double use of the same sign need not cause any mistake, for the simple inspection of the bar dissipates any confusion. However, in case of difficulty, . : ' may be put before the first four values, and . : : before the others.

The dotted value is shown by a dot placed after the note ; when the note is double dotted, two dots are placed. The triplets are marked by : placed before a series of notes ; a blank space marks the end of the bar ; : ' is the pause ; : . the half-pause. The rest is marked : . ; the half-rest is marked by : : to show that several notes must be struck in accord ; if there are two, . ' is put between them ; . : is put before three notes in accord ; and . : : before four notes.

The Gospel according to St. John and a little reading book have been published at Bristol on the plan proposed by Mr. T. M. Lucas. The relief-printing is fine, but the characters are stenographic : consequently a mass of abbreviations, which render reading more or less uncertain. He uses only three primitive signs : a line, a curve, and a dot.

He gives the line four different positions : perpendicular, horizontal, oblique, and vertical. The curve also allows of four positions, according as it is turned to the right, to the left,

## M. BRAILLE'S DOT ALPHABET.

## 1st Series.

·     ··    ··    ··    ··    ··    ··    ··    ··    ··  
*a b c d e f g h i j*

## 2nd Series.

··    ··    ··    ··    ··    ··    ··    ··    ··    ··  
*k l m n o p q r s t*

## 3rd Series.

··    ··    ··    ··    ··    ··    ··    ··    ··    ··  
*u v x y z ç é â ë ù*  
           *ieu*                    *oin*

## 4th Series.

··    ··    ··    ··    ··    ··    ··    ··    ··    ··  
*â ê î ô û ë ï ü æ w*  
*an in on un eu ou oi ch gn ill*  
                                   *n*

## Punctuation and other signs.

·     ··    ··    ··    ··    ··    ··    ··    ··    ··  
*? ; : . ? ! ( ( ( \* ×*  
                                   *✓ ×*

upwards or downwards ; each of the four positions of the line receives four additional characters by means of a dot, which makes twenty signs ; each of the positions of the curve undergoes two changes by means of this dot. Which gives us thirty-two characters, then a dot, a circle, and two lesser curves turned to the right and the left. The elements could not be more simple ; and, if an arbitrary alphabet could be or ought to be adopted, I prefer Mr. Lucas's. The author shows the two advantages his system offers in a little pamphlet entitled " Instructions for Teaching the Blind to Read."

Everyone knows, says he, that we can read less quickly by means of our fingers than with our eyes ; because the fingers touch less at one time than the eyes can at once perceive. Therefore, the more words are simplified and abridged without being less distinct, the nearer we approach to the advantages of sight ; since, by that means, laborious spelling is changed all at once into easy reading. Add to this, again, that the simplicity of the form, while making reading more rapid, renders it at the same time more sure. The second advantage of a stenographic character is that it may be applied to all alphabetical languages. We should only have to calculate the respective proportion in which use is made of each letter to adapt to that one which occurs most often the sign which occupies the least space. In the English language the letter *e* is used one hundred and twenty times for once that we use the letter *z*.

I have heard two of his pupils read a chapter of the Gospel according to St. John. One of the best pupils occupied three minutes twenty-nine seconds in reading the first thirteen verses of the twelfth and seventeenth chapters of the Gospel. I have heard other pupils read these same verses printed with Mr. Gall's characters in still less time. One of Mr. Lucas's pupils, who had attended the school during one year at least, could only read with great difficulty a line I pointed out to him in the middle of a chapter, and often made mistakes when a single sign denoted a whole word, as is often required by Mr. Lucas's system. Each isolated letter, for instance, stands for at least three words. There are even

characters representing as many as seven words, so that a mistake is only too easy, and would suffice to cause the abandonment of this process.

The letter *r* sounds as if it were preceded by an *a* ; *j* and *k* as if there were an *a* after those letters ; *j*, *l*, *m*, *n*, *s* and *x* as if they were preceded by an *e* ; and *b*, *c*, *d*, *g*, *p*, *t*, and *v*, as if they were followed by an *e*.

The beginning of St. John's Gospel is thus written :—

t gospel b st jon, chap 1.

in t bgini ws t wrd a t w ws w g, a t w ws g, t sam ws n t bgini w g. l things wr mad b him, a w o hm ws nt a thing mad tht ws mad. in hm ws life a t l ws t lit f mn.

The words have very often to be understood by the context of the sentence, and it is possible to make such a sentence by means of his characters that the author of the process himself would be unable to unravel it.

Mr. Hay, a blind man in Edinburgh, contrived another alphabet. It is his work which suggested to the Society of Arts the idea of proposing the competition which it afterwards opened.

Mr. Hay, whose alphabet at first pleased the Society much, had calculated that books for the use of the blind printed with his alphabet would be reduced to a third of the size required by Mr. Gall's system, who himself had proved the fact that his books contained on a given space much more matter than those printed at Paris. He put 509 characters where there were but 408 letters in the French books, although his letters were much larger and consequently more easily recognised by the touch.

Mr. Mungo Ponton, Writer to the Signet, another competitor, was also of opinion that an arbitrary character is the only kind that can be serviceable to the blind. The blind alphabet, he says, ought to be easy to learn, easily impressed on the memory, and quickly read by the finger. It appears to me generally admitted, he adds, that the character used by those who can see, such as it is, does not supply these conditions, and that to adopt it in order to spare the friends of the blind the difficulty of learning



another is to sacrifice the interest of the blind to the indolence of those who enjoy their sight.

I do not believe, he continues, that it is possible to invent a collection of signs which the blind can easily read and print themselves, and which would preserve a sufficient resemblance to common characters for the friends of the blind to be able to read it easily and without a key. But, if a key be required, they would just as readily acquire an altogether arbitrary alphabet as if this alphabet preserved a vague likeness to the Roman character. Therefore, he adds, I believe that, in the choice of an alphabet for the blind, it is necessary to try to ascertain which is the form required by the sense of touch rather than to try to preserve some resemblance to known characters.

Mr. John Lothian, one of the competitors, who had sent in an arbitrary character, also explained his motives. The letter, he says, which perhaps seems very simple to the sight, may be very difficult to identify by the touch. The simplicity of a character is altogether relative. Therefore, I have abandoned without the least hesitation all idea of giving my characters sufficient resemblance to our alphabets for them to be easily identified on the first inspection. When forming an alphabet for the blind, we ought to prefer that which suits the blind rather than that which they who see would desire.

The adoption of the Roman character, says the Rev. Edward Craig, would doubtless offer some advantages ; it would associate them more immediately with society, and would assure them of an assistance in their writing and reading from all sides which they will not otherwise meet with. But this is almost impossible ; the difference between the Roman letters is not sufficiently palpable, they are too compound, and to use them in printing they ought to be very large, and their size would add very much to the expense.

I give an engraving containing sixteen arbitrary alphabets which were sent to the Society. Those who had invented them claimed that these characters possessed a greater characteristic difference, that they are more easily read by the touch, and that they take

1  
.  
)  
3  
,  
5  
1  
0

# A B C D E F

Alexander H. W.  
9th Jan'y 1832.  
Blind.

| 1 > U t \ /

Jacques J. Wal. Rev.  
15th July 1832.

| J J U U L |

M. B. Banks  
29th Nov. 1832.

| - b c d i |

Mungo Portman  
1st March, 1833.

| = L < > = -

John Richardson  
6th Feb'y. 1833.

| 1 - 1 1 -

John Johnston  
26th Feb'y. 1833.

| . . . . .

Daniel M. G. Rowen  
27th Feb'y. 1833.

| : L ( J .

John Henderson  
12th March. 1833.

| : : : . . .

John L. L. L.  
1st March. 1833.

| ^ v t i L

Robert Milne  
25th Feb'y. 1833. (Blind)

| - 1 1 1 1

Richard Eaton  
23rd Feb'y. 1833.

| < 1 1 1 >

John Jones  
24th October. 1833.

| . . . . . \ ( / -

Lady Charlotte Evers  
1832.

| 1 ) ( ^ -

Rev. & Edw. C. Craig  
12th March. 1833.  
(not Competing)

| - - - - -

James Thompson Advocate  
25th Feb'y 1833.  
(not Competing)

| □ △ ▲ ▲ ■

D. W. H. Green  
(not Competing)

| 7 b c d c

up less space than the ordinary alphabet. But I have no doubt, judging by what is before our eyes, that no one will be of this opinion. On the contrary, a very superficial examination will convince all those who will take the trouble, that the general form of our printed letters offers more variety than these arbitrary alphabets. It has also been asserted that by giving different positions to one character, the number of forms are reduced, and that these characters are consequently more easily fixed in the memory. But, in reality, each new position of a sign is a new form, or at least something new to be impressed on the memory. In this respect, the advantage of a new character is not very striking.

This was the opinion of Mr. W. Taylor, to whom the Society of Arts had forwarded all the communications it had received ; which he has stated in his very sensible and impartial report which the Society has decided to print in full. The prize was there-  
re awarded to the characters of Mr. Fry, of London. Mr. Fry's letters are those which have been adopted by Mr. Alston, of Glasgow, who has made their surface a trifle less flat.

In fact, if a character known to those who have their eyesight be used in relief-printing for the blind, these unfortunate creatures are brought nearer to other men than if they made use of another character unknown to those about them. Whatever may be said, it is troublesome to learn a new alphabet in order to teach it to children ; and this difficulty will deter many persons who would otherwise apply themselves to it. To decrease the difficulty which those who can see would have in learning an alphabet for the blind is really to work in the interest of the blind.

The largest number of blind is found amongst the poor, and the greatest misfortune of the blind consists in their isolation. All our efforts should tend towards bringing them near to ourselves, and to make their education as like our own as possible, and to begin this education as quickly as may be, and not to think that a special institution is needed for teaching them to read. If the characters in their books are those which we teach to other children, ordinary schools will be able to

admit from their infancy these unfortunate beings, who have been hitherto kept afar off under a false pretext ; and their misfortune will lie less heavily upon them, their intellect will be developed, and the advantage they will derive from their stay in special establishments will be in harmony with what they will have learnt before entering them.

Young blind people are very subject to low spirits because they are shut out from the occupations and games of other children ; always confined to the house, trained rather than guided, overwhelmed with careful but too often mistaken attentions, they are prevented from acquiring that confidence in themselves they ought to have ; and, for fear of a fall or a slight hurt, their relatives do not let them know the place where they live and the objects surrounding them, which would be so great an advantage to them. If the young blind went to school with other children, they would take part in their games and would be strengthened by the exercise. They would be obliged to rely more on themselves ; for from natural indifference the children who had their sight would often leave them to themselves, or would be satisfied to direct them by words, which would be still better. But choosing the ordinary character would render all this possible, and the teaching of the blind would thus become as simple as that of others.

Reading is very useful for the blind ; it occupies and instructs him ; but writing is still more useful, and a want more often felt. To communicate with others by writing it is necessary that he use a character known by those with whom he wishes to correspond. To give them one alphabet for reading and another for writing is to double their difficulties.

The question has been debated for some years, but is now decided. France, Germany, Switzerland, England and America have adopted the ordinary character. A single attempt of some importance has been made with arbitrary characters, and that is the printing of St. John's Gospel and of a small reading book with stenographic signs by Mr. Lucas, of Bristol. But no institution has adopted or will adopt it, for the conviction of the

advantages of the ordinary alphabet are too strongly rooted in the mind of directors of these institutions (see Addenda).

But after this there remains another question to debate, the solution of which is less advanced than the former. It is to decide if the capital Roman characters, A, B, C, D, E, F, &c., ought to be adopted, or the small letters, a, b, c, d, e, f, &c., modified in such a way, however, as to preserve their known form.

The Edinburgh Society of Arts had decided in favour of the

**A B C D E F G H I J K L M**  
**N O P Q R S T U V W X**  
**Y Z , ; : . ! ? - &**  
**1 2 3 4 5 6 7 8 9 0**

**A B C D E F G H I I K L M N**  
**O P Q R S T U V W X Y Z**  
**, . ; : ! ? ' - & + ÷**  
**1 2 3 4 5 6 7 8 9 0**

**GLASGOW ALPHABETS.**

capital letters. Mr. Taylor's reports had very much contributed to this decision. This opinion had many more supporters than the other at the time of my journey, and books printed according to this system were introduced into more establishments than the books with the small letters modified.

Two men are still divided in opinion. Mr. Alston, of Glasgow,

uses capital letters like the sample given above. As he is active and generous, his visits, his entreaties, and the low price at which he has offered his books to the directors of institutes, have decided them to try the system in most establishments.

Mr. Gall, of Edinburgh, uses the small letters, but modified and made angular. Mr. Gall argues the matter. Each of these letters has been the object of long and serious study. He challenges a trial, but he waits ; and, without wishing to hasten it too much, he resolutely hopes for the success of his ideas and the definite adoption of his printed books.

I have had the advantage of prolonged discussions with Mr. Gall on the form of the letters to be adopted. It is more than ten years since he undertook this printing, and he has not ceased improving it. No doubt it is still far from the perfection it will attain if he continue his efforts ; but the improvements adopted bear witness to the purity of his intentions and to the sincere desire which animates him of making what is really the best, for my remarks have induced him to modify again the forms of several letters.

I now give my readers a specimen of Mr. Gall's first attempts. There is many a letter which at first and on the first inspection cannot be recognised, and that is to be regretted. Mr. Gall has been unjust to himself in changing the form too much, and this has militated against the adoption of the system. Originally his alphabet was placed in the list of arbitrary characters, and it partly deserved this classification ; by making it more like the ordinary characters, it would lose none of the advantages it has at present, and would be infinitely more pleasing to the eye.

The beauty of the letters, although it cannot be appreciated except by those who have their sight, deserves our consideration. The first condition to observe in the formation of an alphabet is to render the letters as beautiful as possible, while preserving the qualities which make them easily distinguishable by the touch.

Letters are all the more tangible the more they differ from each other by their general form ; and this form in the capitals is very varied for the eye, which sees the inside strokes of the

## EDINBURGH ANGULAR ALPHABETS.

◁ ▷ < ▹ ↵ ↻ ⋄ ⋈ i j  
 K I M Λ ⋄ ⋈ ⋄ ⋈  
 † V V W X Y Z , - : ? -  
 1 2 3 4 5 6 7 8 9 □

◁ ▷ < ▹ ↵ ↻ ⋄ ⋈ i j k l  
 M Λ ⋄ ⋈ ⋄ ⋈ ⋄ ⋈  
 W X Y Z , - : ?  
 1 2 3 4 5 6 7 8 9 □

◁ ▷ < ▹ ↵ ↻ ⋄ ⋈ i j k l m n  
 ⋈ ⋄ ⋈ ⋄ ⋈ ⋄ ⋈ ⋄ ⋈  
 1 2 3 4 5 6 7 8 9 □



letters ; but these letters are too uniform for the touch, which only perceives the outlines. Let us judge of this by the two lines which follow, and in which I have tried to show what part of a capital letter the finger can touch.

**H N M K X Z E R B D O C C S U P F V Y T I W J A L Q**  
**H N M K X Z E R B D O C C S U P F V Y T I W J A L Q**

When all the letters have the same height, their tangibility is necessarily less than if they had projections above or below the line. Thus the letters used by Mr. Gall, even if the interior be filled up, will preserve by their upper projections characteristic marks which capital letters do not possess.

I will try to make this understood by the line of letters which follows, and which shows very nearly what a blind person can feel of such a line.

**a b c d e f g h i j k l m n**  
**o p q r s t u v w x y z**

I admit that the forms are more distinctly preserved in some of the characters than they would be for a blind person ; but we shall still be able to have an approximate idea of them. It suffices to point this out.

On the other hand, the adoption of the small letters is of advantage to the blind. This type is used in France, Germany, America, and England. Only one printing establishment makes use of capital letters, and that is Glasgow.\* There is so little difference between the letters adopted in these different countries that every blind person who has learnt to read books printed at Edinburgh can after an hour's practice read books printed in

---

\* I have heard that the Institute for the Blind at Philadelphia has also recently adopted capital letters.

## SPECIMEN OF ALPHABETS.

*N<sup>1</sup>*

a b c d e f g h i j k l m  
 n o P Q r s t u v w x y z &

*N<sup>2</sup>*

a b c d e f g h i j k l m  
 n o p q r s t u v w x y z

*N<sup>3</sup>*

a b c d e f g h i j k l m  
 n o p q r s t u v w x y z

other countries. In this way different books can be usefully exchanged and libraries for the blind can be enriched.

The use of small letters does not prevent the use also of capitals as initials. On the contrary, this use will make books for the blind neater and more distinct. Besides, the knowledge of capital letters is useful on many occasions: for instance, in reading inscriptions, &c.

I have spoken already of the advantage there is in adopting the ordinary letters, because of its usefulness to the blind in enabling them to learn more easily the forms of the letters they have to trace upon paper; but the form of the small letters is nearly always that of written letters. This advantage has suggested to me the idea of proposing the alphabets engraved on the preceding page. See No. 3.

Alphabet No. 1 was that on which I had at first fixed. It was only a modification of the one finally adopted by Mr. Gall, and a copy of which will be seen engraved on p. 97.

This alphabet preserves exactly the ordinary form of letters, only, in order to make them more tangible, some accessory features have been removed from the letters.

**a** has become **a**      **b** is open **6**  
**c** is less round **C**, so as not to be taken for **O**, &c.

I had got thus far in drawing up my report when I had the honour of receiving a visit from Mr. Taylor, the man most skilled of any in England in all relating to the education of the blind. It was Mr. Taylor who decided the Edinburgh Society of Arts to award a gold medal to the capital letters of Dr. Fry, of London. It was he, too, who was recently commissioned by the British Association for the Advancement of Science to make the report on the art of printing for the blind which that Society has included in its memoirs, and in which it concludes in favour of capital letters. I had a conference with him last November on the choice of an alphabet, and I explained all the advantages of

the small letters. After a searching study of this matter, he informed me that he had decidedly changed his opinion ; and that, in spite of all he had written, the evidence of the advantages connected with the system I extolled had forced him to acknowledge and accept the truth, and I make this known with his consent. This important conquest gives me a well-founded hope that we shall arrive at an uniform character in all countries in time, and sooner than I had before dared to hope. Mr. Taylor's conclusion has, besides, confirmed me in my opinion ; and, now that I know it, it is with yet more confidence I propose to adopt small letters for relief-printing in Belgium.

Mr. Taylor has not only adopted this alphabet, but he has introduced a real improvement which I shall explain.

The alphabet used for printing in relief in the Institute for the Blind at Paris occupies three spaces, as may be seen from the following diagram :—



The American alphabet (imitated from the Edinburgh one), and the one I propose, No. 1, only occupy two spaces.



In order to economise space no letter descends below the line, and the letters are nevertheless twice as tangible. To obtain this result, those letters the lower strokes of which descended have

been raised, and their bases are placed on the level of those without projections; as we see in No. 2, in the letters g, j, p, q, y, &c.

This displacement of the letters gives them characteristic points which prevent us from mistaking their name and value; but the eye, not being accustomed to this, rather dislikes them; and use has even been made of the Roman capital G in the American alphabet.

Mr. Taylor therefore proposes to reduce the upper projections a little, and to give the letters strokes descending below the line. These lower and upper strokes, while assisting to distinguish the letters, would, however, be so short that the characters would only occupy one-sixth of the space of the Glasgow characters No. 2. See the engraved alphabet No. 2.

This loss is too well balanced by the advantage the letters gain with regard to tangibility for me to hesitate one moment in believing that the adoption of these characters would be useful.

After choosing the alphabet, we have to find out what size the letters ought to be. If a person having his eyesight, who had learnt to read with his eyes, tries to do so by the touch, the progress he makes is so slow and so wearisome that he would be tempted to condemn reading books in relief as an Utopia. The conclusion he drew from his experience would, however, be erroneous, and a little reflection will show this. After the education the eye has received, it is capable of observing objects with an astonishing celerity and accuracy. But it did not always have this power.

At first the eye is a very sterile organ. Its primary object is colour, and that is all it is in a condition to distinguish as a sense. All the information we receive at present by means of this organ as to the shape, size, and distance of objects is information which originally was only communicated by the touch. We have always noticed that such and such changes of colours and shadows correspond to certain changes of form. This experience is so invariable that, at last, the eye concludes instantaneously from the colour as to the form. This education

of the eye was already made even before we had begun to reason ; and we had become so skilful at discerning distances and forms at a glance, before we were in a condition to know whence we had this power, that we have attributed to the eye what came to us by the touch. The eye having supplanted the touch so well, this latter sense has been neglected, and we have no idea of the extent it would be able to obtain. If we wish to form a correct idea of the power of this sense, we must put ourselves as far as we can in the position of the blind. They must be our guides, and here they will not be blind guides.

Experience ought to precede reasoning, but it is well known that the loss of one sense turns out of advantage to the others. That is, because we cultivate all the more those which are left. The loss of sight gives a delicacy to the touch, of which we, who are not accustomed to receive information by the touch, are unable to form a just idea. The touch replaces the sight to a surprising extent by practice and exercise, especially if we begin to exercise it early.

The wonderful rapidity with which we read is the result of long practice. The discerning and combining of letters is made slowly at first, and it is only by degrees that we succeed in reading with rapidity. Therefore, we must never compare the eye which has received its education with the touch which has not received any, but we ought rather to conclude from the power which our eye has acquired how much the touch may be able to acquire if it be properly trained. Analogy must lead us to this. So it is not necessary that the letters be too big, firstly, so as not to increase the bulk of the books, and so that the finger may more quickly distinguish the shape ; for the larger the surface the letter fills, the more time the finger requires to find it out. But it would be a very dangerous error to believe that characters may be reduced to just what a blind person can feel. We ought to create in him the desire, the inclination, the thirst for reading, and we shall never succeed in so doing if reading be an effort. We ought to encourage them to read, and that is not to be done by showing the blind how very small are the

characters which they cannot easily read, but by showing them that they can easily read the books which have been printed for them.

All the senses are modified by exercise, and are capable of acquiring a wonderful degree of susceptibility. That which the senses cannot do at first becomes easy after repeated attempts.

The nicety of perception which a sense has is exactly in relation with the habit it has of receiving those perceptions. Use improves. The size of the character proposed in No. 2 is that which a pupil can read distinctly, and which a man whose fingers are hardened by labour may continue to read. There is only a board wanted at the side of this character to print the alphabet in larger letters for the use of beginners, so that they may be able to note the characteristic points of the letters. The increasing delicacy of touch will necessitate, perhaps, or will permit, a reduction in the size of the characters; but the one I propose will provisionally answer the requirements of the moment.

Each letter has been studied separately, and this has been necessary in order to find the best means of rendering it most distinct by making the least alteration in its common form.

**a** is distinguished from **O** because the upper stroke is not curved as in the **a** of the ordinary alphabet. **b** is open, so as not to be mistaken for **h**. **c** is only a semicircle, so as to be distinguished from **e** and **o**. The lower stroke of **f** is a characteristic point, the better to distinguish this letter from **J** and **t**. **g** has an exterior outline, by which this letter is isolated from every other form. **j** instead of descending beneath the lower line, will be better placed upon the line **J**. For, in the former position, the upper part resembles **i**, and the lower part is like **f**, while, if placed on the line, **J** can only

be mistaken for **l**, and is distinguished from it by the base **j**.

The upper stroke to the right of **k**, instead of being on the level of the upper line, would be better projected above that line

**K**, because this projection will distinguish **k** from **b** by

more characteristic points. **S** ought to have its lower semi-circle larger than the other, for otherwise it might be mistaken for **e**, **o**, &c.

The lower or upper projections and the forms are not the only points by which a letter may be characterised and rendered easily distinguishable by a blind man; but the respective size of the letters greatly contributes to prevent confusion. Therefore

**m** will be made wide, and **n** narrow **n**. The same applies to **V** and **W**.

The relief may be too high, and that is the fault with which most of the books printed for the blind may be charged.

The tangibility of a letter is not in proportion to the height of the relief. However little this relief may be raised, from the moment that is a clear projection above the plane surface of the paper, the blind person can read what is printed. I have a pupil born deaf, dumb, and blind. I have accustomed her to a relief six times less elevated than the relief of the Paris books, and she reads it with extreme facility. Another observation in support of this: Mr. Gall has assured me that the blind read a book which has been used more quickly than one just out of the press.

A relief which is too high not only impedes celerity in reading, but materially increases the size of the books and necessitates the use of cylindrical presses. These presses have the disadvantage of wearing out the type more quickly than does a perpendicular pressure: for all the pressure of the cylinder when in motion is made successively on only one part of the type, instead of, as with the other presses, bearing upon all the letters at once.



Lastly, Mr. Gall, of Edinburgh, has invented dotted letters, which may be seen in the next page. The letters are formed by a succession of dots, and these dots, raised and supported as if by a series of arches, resist the pressure they must bear during reading better than any other relief. A dotted line is more tangible than a plain line, consequently this kind of printing would no doubt be suitable for blind persons whose hands have been hardened by labour. Mr. Taylor has assured me that he has nowhere seen the blind read more rapidly than at Berlin, and the letters used there are dotted. As the aged blind could not possibly continue reading the Paris printing, it has been deemed advisable to print books for their use with dotted letters. This again seems to prove favourable to Mr. Gall. Besides, the books would cost much less printed in this way, as the workmanship would be much easier. I admit, however, that, in spite of my conviction, I have not succeeded in convincing persons who are interested in this kind of printing of the utility of dotted letters, as I have been able to convince them of the advantages of small letters. They generally fear that the roughness of this printing may be injurious to the delicacy of touch of the young blind. No doubt all opinions might be conciliated by using the two types, plain and dotted, the one for the young blind and the other for those who are more aged. Experience alone will be able to decide.

A B C D E F G H I J  
K L M N O P Q R  
S T U V W X Y Z

a b c d e f g h i j k  
l m n o p q r s t u v  
w x y z . , &

0 1 2 3 4 5 6 7 8 9  
P Q R S T U V W X Y Z , .  
1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M N  
O P R S T U V W X Z

a b c d e f g h i j k l m n o  
p q r s t u v w x y z . , ! ? &  
1 2 3 4 5 6 7 8 9 0

ADDENDA.

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Page 19, line 9.

The Rev. Mr. Dennet began to teach a small number of blind, but only imperfectly succeeded, and was about to abandon the undertaking, when, owing to Mr. Dawson's zeal, a subscription having been made, a house could be bought. Dawson drew up the rules and organised the institution.

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Page 80, line 10.

Mr. J. H. Frere has just proposed another arbitrary alphabet. It is made according to Mr. Lucas's plan. Subscriptions were raised immediately, and a great part of the New Testament has already been printed. The friend who communicates this news (August 2, 1838) does not say where this new experiment is made. The characters are stenographic.

## GENERAL RULES

### OF THE SCHOOL FOR THE BLIND AT YORK.

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1. The object of the institution is to put the pupils in a position to gain their living, at the same time caring for their moral and religious education.

2. The pupils will attend the churches which their relatives shall direct; or, if they are adults, those they shall choose for themselves.

3. Only those trades are taught which the blind can follow with advantage; but everything which is profitable to their intellectual development may be taught.

#### ELECTIONS OF PUPILS.

4. Persons who have subscribed £1 per annum and those who have made a donation of £10, or those who having made a donation of £5 will subscribe 10s. yearly, have a right to vote in the election of a pupil; those who contribute double will have the right to two votes, and so on.

5. A legacy of at least £50 will authorise the first executor under a will to give one vote in the election of each pupil for life.

6. Before the elections the Committee will fix the number of pupils to be elected, will examine the claims of the candidates, and publish the list of those who are eligible.

7. The Committee must place on this list children from ten to fifteen years of age in preference to those who may be older or who shall not yet have attained that age.

8. Those who may have preserved a more perfect sight than to

distinguish darkness from light, or those who would be incapable of learning a trade from weakness of intellect, will not be elected.

9. Those who may be subject to a contagious disease and who may not have had the small-pox or who have not been vaccinated will not be admitted.

10. Every pupil elected, before he can be received into the institution, must find a person who will make himself responsible by a written engagement for payment of the board required by the rules, and who will engage to take back the pupil when discharged from the institution.

11. The elections are held twice a year.

12. Voting may be by proxy.

13. The Committee will fix the sum to be paid by the pupil for his board and clothing.

14. The children of well-to-do parents may be admitted to receive their education on favourable terms.

15. Subscribers can only vote when their subscription is paid.

16. Annual subscriptions are payable in the month of January.

#### GOVERNORS.

17. Those who shall have made a donation of at least £20 and subscribers of £2 per annum, or those who after having made a donation of £10 shall have subscribed at least £1 per annum, shall be governors of the institution, and shall manage its affairs.

18. The governors shall meet the first Thursday in the month of May, and the first Thursday in October, at one o'clock in the afternoon; and they shall be summoned by five of their number. Seven governors make a quorum.

#### COMMITTEE.

19. The governors shall choose yearly a directing committee which shall consist of fifteen members, chosen among the sub-

scribers, of a president, two vice-presidents, the secretary, and of the treasurer of the institution, and of the secretaries and treasurers of the local committees. Three members at least of the fifteen shall vacate their posts annually, and shall be replaced at the annual meeting in the spring.

20. The Committee shall meet regularly on the second Thursday of every month ; and extraordinarily when it shall be called together one day in advance. At these extraordinary meetings no resolutions can be taken as to the medical men or the money to be invested. Three members suffice to form a quorum.

21. The Committee will take the necessary measures for the education and supervision of the pupils. The Committee will ask the superintendent for an annual report of the state of the school, and will visit it from time to time. The Committee will manage the affairs of the establishment in the interval between the governors' meetings, it can invest money or change its investments, but it shall not be able to sell or buy funded properties except when so authorised by the governors.

22. The members of the Committee cannot be purveyors to the institution nor have an interest in any contract relating to it.

23. The doctors, the teachers, and the servants are chosen by the Committee.

24. The superintendent and the master will be elected at a special meeting of the Committee ; all the members having had fifteen days' preliminary notice of it.

#### SUPERINTENDENT.

25. The superintendent-general will watch over the conduct of the pupils, the teachers, and the domestics. He will regulate the system of education, under the supervision of the Committee, and will present a report on the state of the school every month.

#### VISITORS.

26. Two members of the Committee will be nominated to visit the school monthly. They will write their remarks in a book, which the Committee will examine at each monthly meeting.

27. Two ladies will be engaged to visit the girls, and to record their remarks in a similar book.

#### MASTER.

28. The housekeeping of the Home is entrusted to a master under the supervision of the Committee. He will give instruction to the pupils under the direction of the superintendent; some branches, however, will have a special professor. He will receive the subscriptions and the pupils' board. He will sell the articles manufactured in the institution. He will keep the accounts of the home and present a monthly statement of them to the Committee. He will deposit his monies in the bank, and never reserve more than twenty pounds sterling in cash.

#### MISTRESS.

29. The mistress will assist the master in the management of the home and will specially supervise the girls. She will look after the cleanliness of the house and the pupils. In the master's absence the mistress is entrusted with the general management.

#### PUPILS.

30. The boys and the girls are always separated, at least when the master and mistress are not present.

#### OF GOING OUT OF THE INSTITUTION.

31. The pupils shall not leave the enclosure of the institution without permission.

32. Pupils who may have members of their family residing at York may go out between two and seven o'clock on the first Saturday of each month.

33. Pupils may take a holiday if they wish to do so at Christmas for a fortnight and in July for a month.

## ORDER OF THE DAY.

34. The pupils rise at six from the Annunciation until Michaelmas Day. The other months of the year they rise at seven o'clock.

35. The pupils retire to rest during all the year at half-past eight o'clock in the evening.

36. For breakfast at eight o'clock in the morning the children receive a pint of milk, or milk soup alternately, with bread.

37. For dinner they receive at one o'clock daily meat and potatoes, with puddings or tarts.

38. Their supper at half-past six o'clock daily consists of a pint of milk, or milk soup alternately, and bread.

39. There is playtime from noon until one o'clock and from five until half-past six o'clock. During the summer, if the weather be fine, recreation is allowed from five till eight o'clock. There is no work on Saturday afternoon.

## TIME OF PRAYER AND RELIGIOUS INSTRUCTION.

40. In the morning half-an-hour after getting up the pupils shall meet together to hear reading and for prayer. The same is done in the evening at eight o'clock.

41. This article regulates the order for Sunday.

## HOURS OF WORK.

The pupils will work from nine till noon and from two o'clock until five, unless the master teaches them during this time.

All the pupils will learn church singing. Those only whom the superintendent shall judge have a particular taste for music will receive special lessons in the art.

The pupils who may show a special gift for any art will be principally exercised in its practice.

## TIME OF GENERAL INSTRUCTION.

The pupils will alternately receive lessons in arithmetic, reading, writing, &c., from ten o'clock until noon daily excepting Saturdays



and Sundays. During the summer the time not passed in prayer will be occupied during the morning in the instruction of the pupils. During the winter evenings, if the weather will not allow of going out, they will be read to.

QUESTIONS TO BE ANSWERED BEFORE THE ADMISSION  
OF PUPILS.

1. What is the name of the applicant for admission ?
2. What is his age ?
3. What is his native place ?
4. What is his present place of abode ?
5. What are his pecuniary means ?
6. Does he receive assistance from the parish or elsewhere ?  
What is the amount of such assistance ?
7. Where does his family reside ?
8. What are they ?
9. How long has he been blind ?
10. Has he been employed in any work ?
11. Has he received any religious instruction ?
12. What is his conduct ? Has he a character for truth and honesty ?

The answers to these questions must be made by the minister of the parish.

1. Is the applicant quite blind, or does he possess such a degree of sight as to permit his distinguishing light from darkness ?
2. What appears to have been the cause of his blindness ?
3. Is he intelligent and healthy enough to learn a trade ?
4. Has he had the small-pox or has he been vaccinated ?
5. Is he not affected by a dangerous disease ?

A doctor must reply to the preceding questions.

1. By what subscriber is he recommended ?
2. Who is the person in or near York who will render himself responsible for the payment of the board, and who will receive him on his leaving the school ?

The replies to these questions must be made by him who recommends the blind applicant.

## CATALOGUE OF BOOKS

*Written in England on the Blind and their Education.*

PHILOSOPHICAL TRANSACTIONS. 1729, 1774, 1778.

ENCYCLOPÆDIA BRITANNICA. Edinburgh, 1783.

The article "Blind" is remarkable. It is the work of TH. BLACKLOCK, a blind Doctor of Divinity.

GENTLEMAN'S MAGAZINE. 1808.

Pp. 40 and 41. A Deaf, Dumb, and Blind Woman.

INSTRUCTION OF THE DEAF AND DUMB. By JOSEPH WATSON, LL.D. London, 1809.

Contains, pp. 64 and 65, a letter by Astley Cooper on James Mitchell, who was deaf, dumb, and blind.

WARDROP, JAMES. HISTORY OF JAMES MITCHELL, a boy born blind and deaf, with an account of the operation performed, &c. London, 1813. 4to.

ACCOUNT OF THE SCHOOL FOR THE INDIGENT BLIND. 1814.

EDINBURGH TRANSACTIONS. 1814.

On James Mitchell.

ENCYCLOPÆDIA BRITANNICA. 1817. Art. "Blind."

SCRAP BOOK, a selection of interesting and authentic anecdotes. Dublin, 1825. 12mo.

Contains a report on a deaf, dumb, and blind girl.

TRANSACTIONS OF THE SOCIETY FOR THE ENCOURAGEMENT OF ARTS, &c. London, 1827.

Speaks of a machine for writing, invented by Don Isern.

APPEAL ON BEHALF OF THE INDIGENT AND INDUSTRIOUS BLIND. Edinburgh, 1829.

This appeal states the object of the institution and its history.

PURSUIT OF KNOWLEDGE UNDER DIFFICULTIES. Illustrated by anecdotes. London: Charles Knight, Pall Mall. 1831. 2 vols.

The first volume contains the lives of several blind persons, who, in spite of their misfortune, attained a deserved celebrity.

A HISTORICAL SKETCH OF THE ORIGIN AND PROGRESS OF LITERATURE FOR THE BLIND. By JAMES GALL. Edinburgh: James Gall. 1834.

**BIOGRAPHY OF THE BLIND.** By JAMES WILSON. 3rd edition. Birmingham, 1835.

This is a work by a blind author about blind people who have made themselves famous.

**ANECDOTES AND ANNALS OF THE DEAF AND DUMB.** By CHARLES EDW. HERBERT ORPEN, M.D. 2nd edition. London, 1836.

The 2nd Part contains three chapters treating of the blind. The 5th draws a parallel between the deaf and dumb and the blind. He thinks that their education is almost impossible, and says that there is not an instance of such a being being able to acquire the knowledge of language. The 7th speaks of means of communication between the deaf and dumb and the blind.

**PENNY CYCLOPÆDIA.** Art. "Blind."

This article is written by Mr. Charles Baker, director of the Deaf and Dumb Institute at Doncaster.

**STATEMENTS OF THE EDUCATION AND EMPLOYMENT ADOPTED AT THE ASYLUM FOR THE BLIND.** By JOHN ALSTON, Esq. Glasgow, 1836.

**AN ACCOUNT OF THE RECENT DISCOVERIES WHICH HAVE BEEN MADE FOR FACILITATING THE EDUCATION OF THE BLIND.** By JAMES GALL. Edinburgh, 1837.

**INSTRUCTIONS FOR TEACHING THE BLIND TO READ.** By T. M. LUCAS. Bristol.

**REPORT BY A COMMITTEE OF THE SOCIETY OF ARTS IN SCOTLAND ON THE BEST ALPHABET AND METHOD OF PRINTING FOR THE USE OF THE BLIND,** 1837.

This report is very interesting.

**TO THE DIRECTORS OF THE INSTITUTIONS FOR THE BLIND IN GREAT BRITAIN AND IRELAND.** By JOHN ALSTON, Esq.

**OBSERVATIONS ON THE EMPLOYMENT, EDUCATION, AND HABITS OF THE BLIND.** By TH. ANDERSON. London, 1837.

**THE ATHENÆUM.** London. Saturday, September 30, 1837.

On printing in relief.

**NARRATIVE OF THE PROGRESS OF PRINTING FOR THE BLIND AT THE GLASGOW INSTITUTION.** By JOHN ALSTON, Esq., Treasurer. 1838.

**BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.** London, 1838.

This number contains Mr. W. Taylor's report on "Printing in Relief."

**THE SCOTTISH CHRISTIAN HERALD.** May 5, 1838.

This number publishes an article by Mr. Charles Baker, "The Origin and Progress of the Art of Printing for the Blind." 1838.

**MUSICAL GRAMMAR.** By MR. TANSURE.  
**REID'S INQUIRY INTO THE HUMAN MIND.**

This work has appeared in many editions.

**THE DEAF AND DUMB AND BLIND SCOTTISH BEGGAR.**  
 Edinburgh.

## BOOKS PRINTED IN ENGLAND FOR THE BLIND.

### YORK.

**THE DIAGRAMS OF EUCLID'S ELEMENTS OF GEOMETRY**  
**IN AN EMBOSSED OR TANGIBLE FORM FOR THE USE**  
**OF BLIND PERSONS.** By the REV. W. TAYLOR. York,  
 1828. 8vo.

**CARTE D'ANGLETERRE ET DU PAYS DE GALLES** (Map of  
 England and Wales).

**SELECTION OF PSALM TUNES AND CHANTS, IN RAISED**  
**CHARACTERS, FOR THE USE OF THE BLIND.** By the  
 REV. W. TAYLOR. York, 1836. Oblong 4to.

**A SHORT HISTORY OF ELIJAH THE PROPHET, AND OF**  
**NAAMAN THE SYRIAN.** York.

**THE HISTORY OF JOSEPH.** York.

These two little books were printed by Mr. Littledale, a rich blind  
 man, for the use of his brethren in misfortune of the Institute at York.  
 See page 53 of this Report.

### EDINBURGH.

**THE GOSPEL OF ST. JOHN, PRINTED ON LARGEST TYPE**  
**FOR THE BLIND.** 4to. 6s.

**THE EPISTLE TO THE EPHESIANS.** Printed on largest type for  
 the Blind. 1s. 6d.

**THE EPISTLE TO THE PHILIPPIANS.** Ditto. 1s. 6d.

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     "    EASTERN HEMISPHERE.

## BRISTOL.

THE GOSPEL BY ST. JOHN.  
 A LITTLE READING BOOK (Un petit livre de lecture).

## GLASGOW.

FIRST BOOK OF LESSONS 6d. Large type.  
 SECOND BOOK OF LESSONS. 2s. Large type.  
 LESSONS ON RELIGION AND PRAYER. 1s. 6d.  
 LESSONS ON NATURAL RELIGION. 1s. 6d.  
 THE BOOK OF RUTH. 1s.  
 THE EPISTLE OF JAMES. 1s.  
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     JOHN. 4s. 6d.  
     MARK. 4s.  
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     the press.  
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